

D-V7000

SERVICE MANUAL

Ver 1.0 1998.09

*E Model
Chinese Model*



Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-2401AAA
Optical Pick-Up Name	DAX-01A2

SPECIFICATIONS

System

Compact disc digital audio/video system

Laser diode properties

Material: GaAlAs
Wavelength: $\lambda=780$ nm
Emission duration: Continuous
Laser output power: Less than 44.6 μ W*

* This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.

Error correction

Sony Super Strategy Cross Interleave Reed Solomon Code

D-A conversion

1-bit

Channel number

2 channels

Frequency response

20 - 20,000 Hz ± 1 dB (measured by EIAJ CP-307)

Output (at 6 V input level)

Headphones (stereo minijack)
30 mW + 30 mW at 16 ohms
Line output (stereo minijack)
Output level 0.7 V rms at 47 kilohms
Recommended load impedance over 10 kilohms
Video output (minijack)
Output level 1Vp-p at 75 ohms
Recommended load impedance over 75 ohms

General

Power requirements

Player:

- Four LR6 (size AA) batteries: 6 V DC
- AC power adaptor (DC IN 6 V jack):
120 V, 60 Hz
220 - 230 V, 50/60 Hz
100 - 240 V, 50/60 Hz
(AC power required differs depending on where you purchased the player.)

Remote control:

- Two R6 (size AA) batteries: 3 V DC

Dimensions (w/h/d) (incl. projecting parts and controls)

Approx. 140.5 x 30.5 x 144.2 mm
(5 $\frac{5}{8}$ x 1 $\frac{1}{4}$ x 5 $\frac{3}{4}$ in.)

Mass (excl. batteries)

Approx. 310 g (10.9 oz)
Approx. 420 g (14.8 oz) (incl. alkaline batteries and a CD)

Operating temperature

5°C - 35°C (41°F - 95°F)

Supplied accessories

AC power adaptor (1)
AV monitor cord (1)
Remote control (1)

Design and specifications are subject to change without notice.

PORTABLE VIDEO CD PLAYER



SONY®

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Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Before Replacing the Optical Pick-Up Block

Please be sure to check thoroughly the parameters as per the "Optical Pick-Up Block Checking Procedures" (Part No.: 9-960-027-11) issued separately before replacing the optical pick-up block. Note and specifications required to check are given below.

- FOK output: IC601 ⑨ pin (FOK)
When checking FOK, remove the lead wire to disc motor.
- S curve P-to-P value: 0.6-1.8 Vp-p IC501 ⑩ pin
When checking S curve P-to-P value, remove the lead wire to disc motor.
- RF signal P-to-P value: 0.8-1.2 Vp-p
- Traverse signal P-to-P value: 1.2 Vp-p
- The repairing grating holder is impossible.

Precautions for Checking Emission of Laser Diode

Laser light of the equipment is focused by the object lens in the optical pick-up so that the light focuses on the reflection surface of the disc.

Therefore, be sure to keep your eyes more than 30 cm apart from the object lens when you check the emission of laser diode.

Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper lid is closed while turning ON the S401 (push switch type).

The following two checking methods for the laser diode are operable.

• Method-1 (In the service mode or normal operation): Emission of the laser diode is visually checked.

1. Open the upper lid.
2. Push the S401 as shown in Fig. 1.
3. Press the ► key
4. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up.
During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

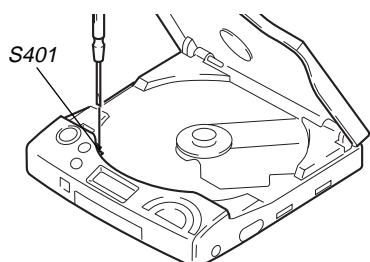


Fig. 1 Method to push the S401

• Method-2 (In the service mode or normal operation): Check the value of current flowing in the laser diode.

1. Remove the upper cabinet.
2. Read the current printed on the rear side of the optical pick-up. (Print on the rear side of the optical pick-up)

AC2211397

current value
A: less than 48 mA

3. Connect a digital voltmeter as shown in Fig. 2.
4. Press the ► key.
5. Calculate the current value by the reading of the digital voltmeter.

Reading of the digital voltmeter (V) \div 4.7 (Ω) = current value (A)
(Example) Reading of the digital voltmeter of 0.2256 V:
 $0.2256 \text{ V} \div 4.7 \Omega = 0.048 \text{ (A)} = 48 \text{ mA}$

6. Check that the current value is within the following range.

- Current value of the label $^{+5}_{-11} \text{ mA}$ (25°C)
Variation by temperature: 0.4 mA/°C
Current increases with temperature increased.
Current decreases with temperature decreased.

If the current is more than the range above, there is a trouble in the automatic power control circuit or the laser diode is in deterioration.

If less than the range, a trouble exists in the automatic power control circuit or the optical pick-up.

— MAIN Board — (Side B)

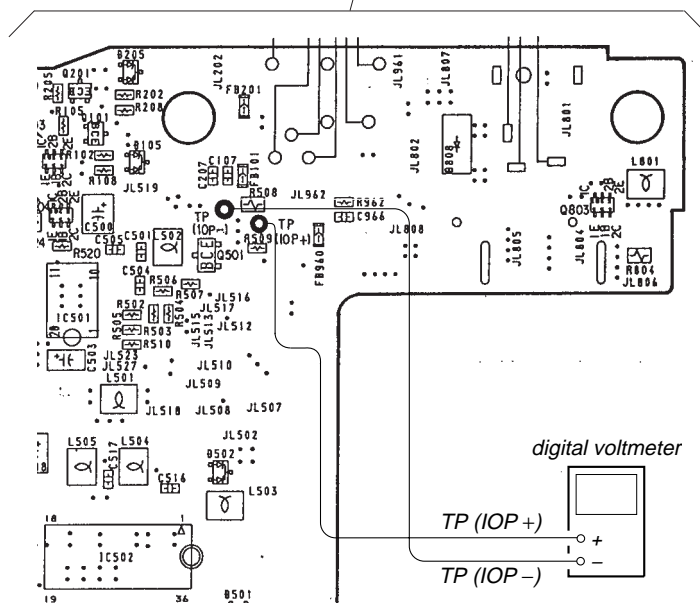
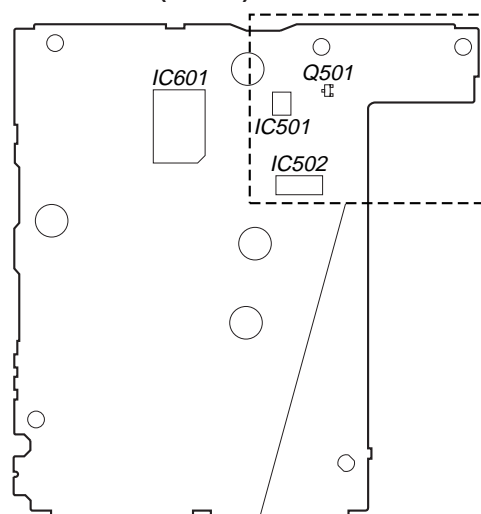
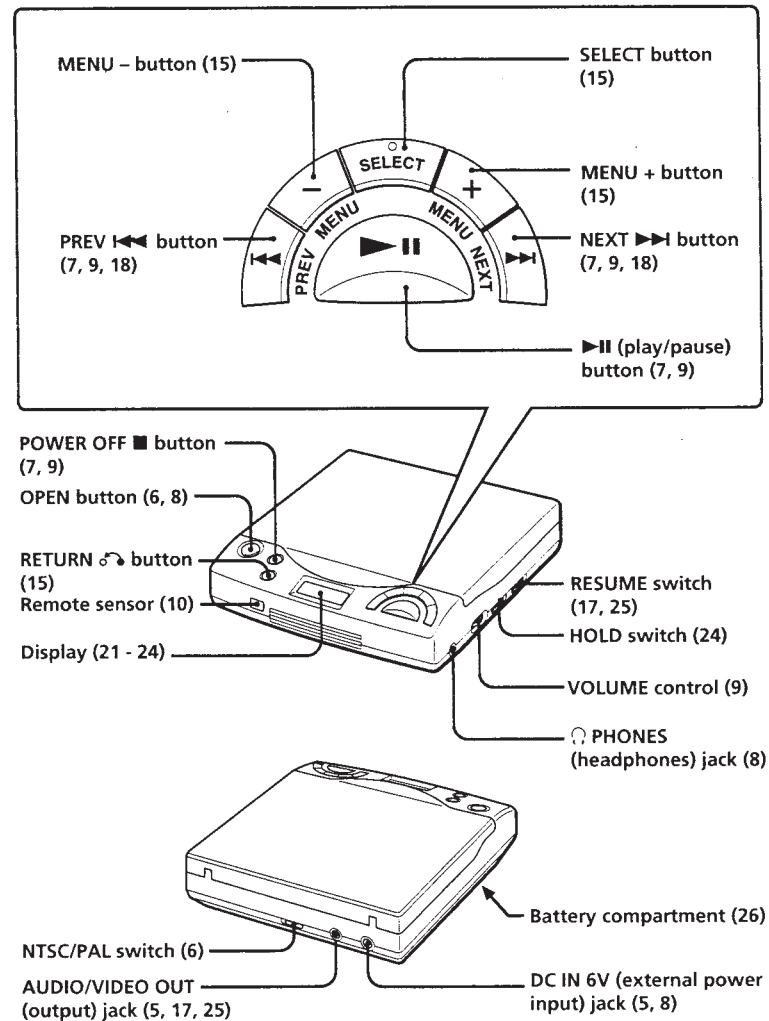


Fig. 2 Digital voltmeter connecting location

Parts identification

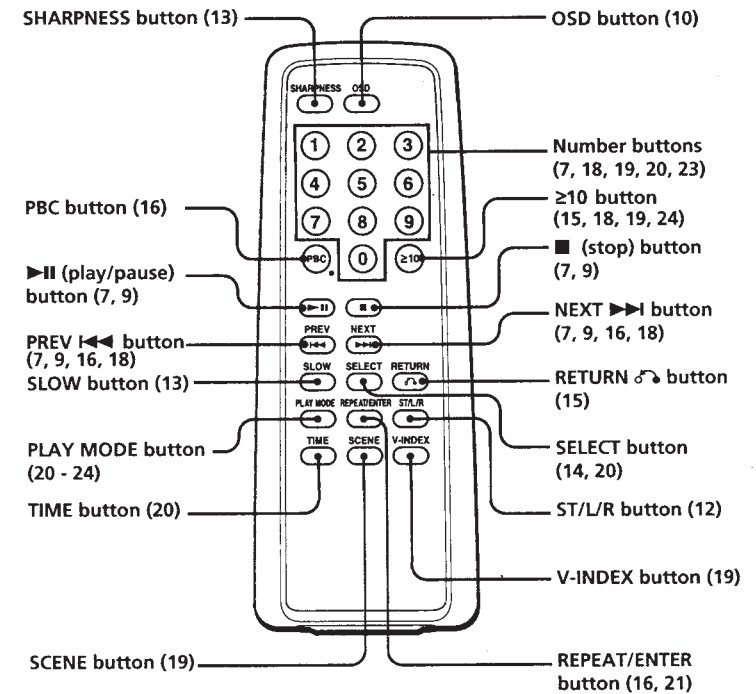
For explanation of the use of each part, see pages indicated in parentheses.

Main unit



Continue to the next page → 31^{GB}

Remote control

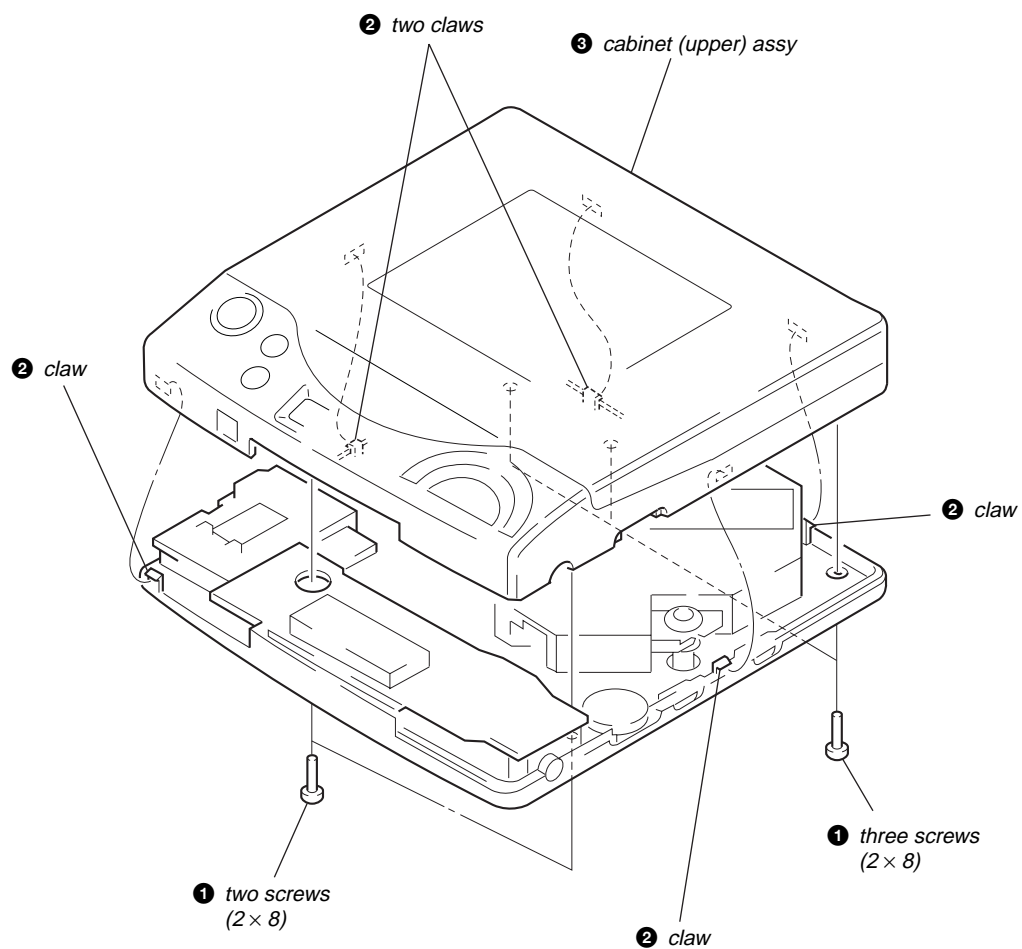


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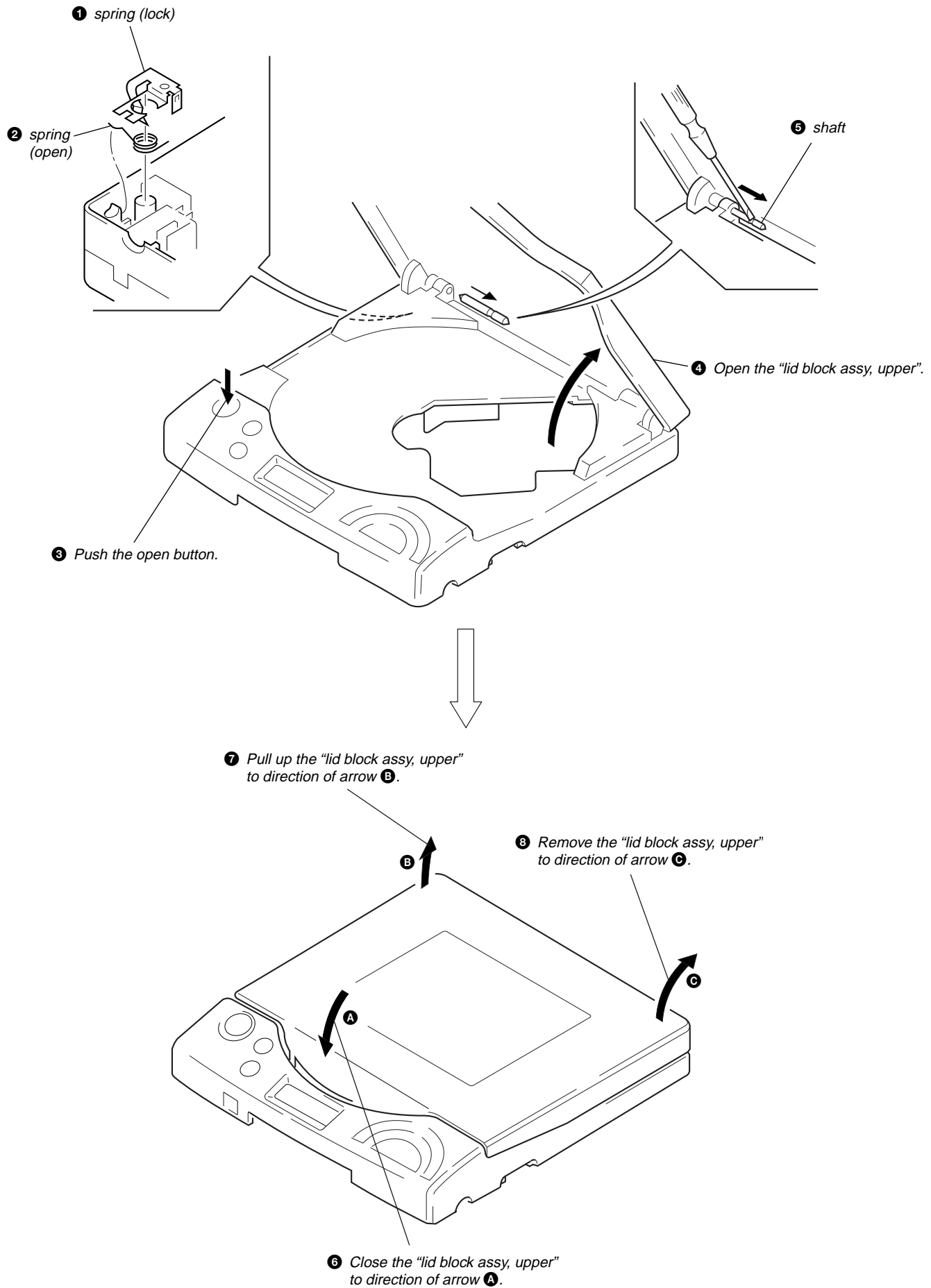
SECTION 3 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

3-1. CABINET (UPPER) ASSY



3-2. LID BLOCK ASSY, UPPER



SECTION 4

SERVICE MODE (TEST MODE)

- In this set, there are two test modes; CD-DA Test Mode and VIDEO CD Test Mode.

How to Enter the Test Mode

1. Disconnect external power (no current is applied to the set).
2. Bridge the SOL701 (TEST) on the MAIN Board with a solder. (IC701 ⑨ (TEST) pin is shorted to the ground)
3. Connect the external power.
4. The CD-DA Test Mode is activated. (LCD display varies in 5-ways, and its 5-way display is repeated)
5. Before connecting external power in step 3, if ■ (POWER OFF) key was pressed, the mode is switched to VIDEO CD Test Mode.
(On the LCD, all segments are displayed, and the TV monitor becomes 100% white)

How to Release the Test Mode

1. Always disconnect external power, and break the solder bridge of SOL701 (TEST) on the MAIN Board.
2. Thus, the set become ready for normal operation.

Each key Function in Test Mode

1. CD-DA Test Mode

Switches	Description
■ (POWER OFF)	Stop processing
▶▶ (PLAY/PAUSE)	Press once: Initialize, Average Correct Press twice: Auto Focus Press 3 times: Focus Auto Gain Press 4 times: Tracking Auto Gain Press 5 times: All Servo ON, Mute OFF
○ SELECT	Repeat once more the processing currently selected with ▶▶ (PLAY/PAUSE) key.
▶▶▶ (NEXT)	Move optical pick-up toward outside track
◀◀◀ (PREV)	Move optical pick-up toward inside track
↺ (RETURN)	Turn off the Mute
+ MENU	Raise K13* by one step after Focus Auto Gain Raise K23** by one step after Tracking Auto Gain
- MENU	Lower K13* by one step after Focus Auto Gain Lower K23** by one step after Tracking Auto Gain

* Coefficient of Focus Gain

** Coefficient of Tracking Gain

2. VIDEO CD Test Mode

Switches	Description
■ (POWER OFF)	Go to CD-DA Test Mode
○ SELECT	Video system reset (return to 100% white screen)

– MAIN Board – (Side A)

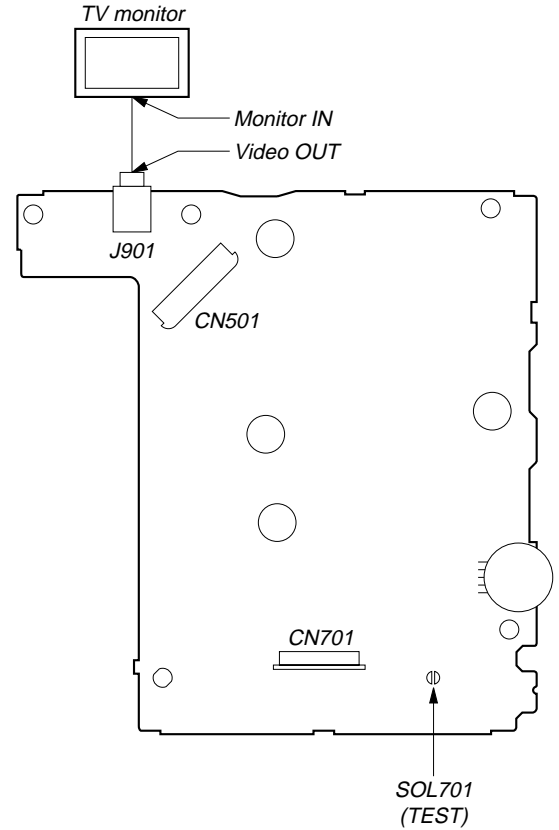


Fig. 1 Test terminal location and connecting position

SECTION 5 ELECTRICAL ADJUSTMENTS

Precautions for Adjustment

- Before beginning adjustment, set the equipment to service mode.
After the completion of adjustment, be sure to reset the service mode.
For more information, see "Service Mode (Test Mode)" on page 7.
- Perform adjustments in the order given.
- Use YEDS-18 disc (Part No.: 3-702-101-01) unless otherwise indicated.
- Power supply voltage requirement: DC6 V
HOLD switch : OFF
VOLUME control : Minimum
RESUME switch : OFF

Before Beginning Adjustment

Set the equipment to service mode (See page 7) and check the following. If there is an error, repair the equipment.

• Checking of the sled motor

- Open the upper lid.
- Press the ►|| key once.
- Press the ►► and ◀◀ keys and check that the optical pick-up can move smoothly without sluggishness or abnormal noise in innermost periphery → outermost periphery → innermost periphery.
►► : The optical pick-up moves outwardly.
◀◀ : The optical pick-up moves inwardly.

• Checking of focus searching

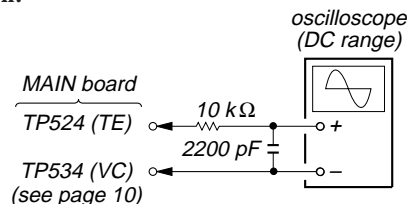
- Open the upper lid.
- Press the ►|| key thrice. (Focus searching operation is activated continuously.)
- Check the object lens of the optical pick-up for smooth up/down motion without sluggishness or abnormal noise.
- Press the ■ key.
Check that focus searching operation is deactivated. If not, again press the ■ key slightly longer.

Tracking Balance Check

Condition:

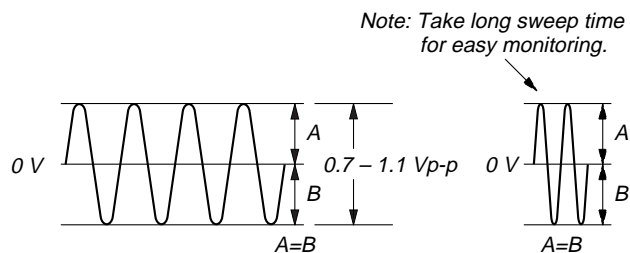
- Hold the set in horizontal state.

Connection:



Checking Method:

- Connect the oscilloscope to TP524 (TE) and TP534 (VC) on the MAIN board.
- Set the equipment to service mode stop state. (See page 7)
- Move the optical pick-up to the center by pressing the ►► and ◀◀ keys.
- Put the disc (YEDS-18).
- Press the ►|| key.
[From focus searching, focus is turned ON while entering CLV drawing-in mode. Tracking and sled are turned OFF.]
- Confirm that a waveform on the oscilloscope is vertically symmetric against 0 V.



- Stop removing of the disc motor by pressing the ■ key.
- After the completion of check, reset service mode. (See page 7)

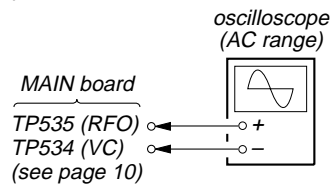
Connection Location: MAIN board (See page 10)

Focus Bias Check

Condition:

- Hold the set in horizontal state.

Connection:



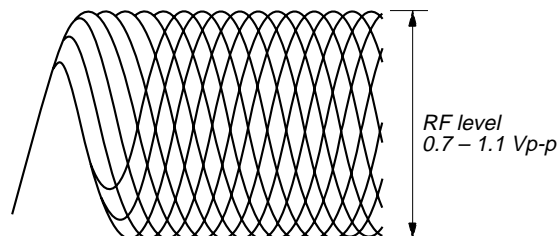
Checking Method:

1. Connect the oscilloscope to TP535 (RFO) and TP534 (VC) on the MAIN board.
2. Set the equipment to service mode stop state. (See page 7)
3. Press the ►|| key once.
4. Move the optical pick-up to the center by pressing the ►► and ◀◀ keys.
5. Put the disc (YEDS-18).
6. Press the ►|| key four times.
[From focus searching, focus is turned ON while entering CLV drawing-in mode. Both tracking and sled are turned ON.]
7. Check the oscilloscope waveform is as shown below.
A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

RF SIGNAL REFERENCE WAVEFORM (EYE PATTERN)

VOLT/DIV: 200 mV (With the 10:1 probe in use)

TIME/DIV: 500 ns

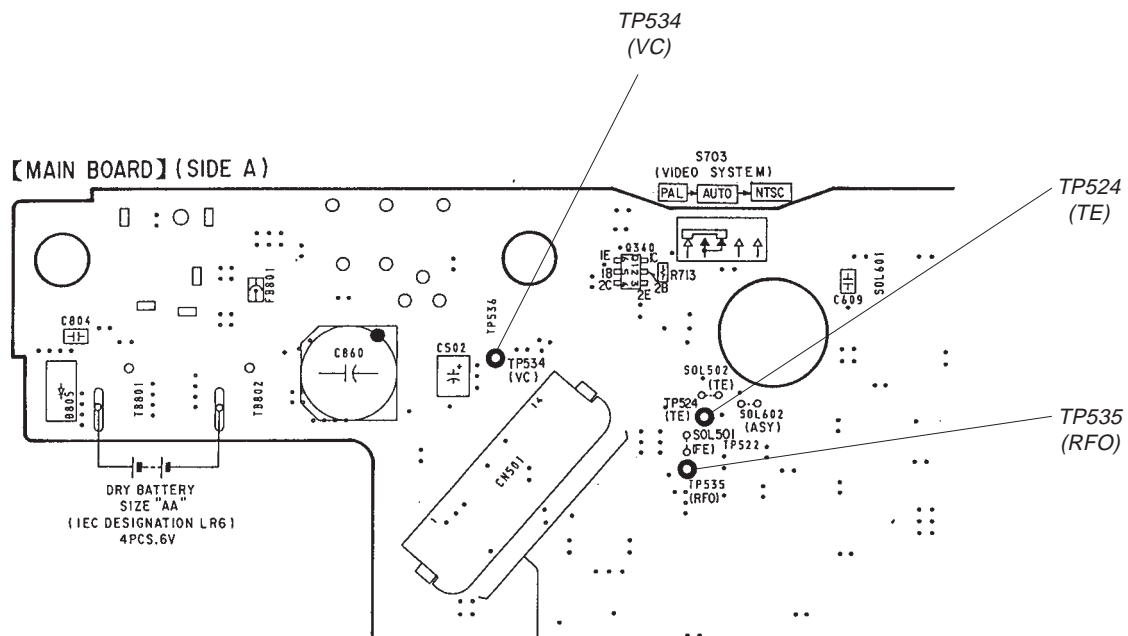
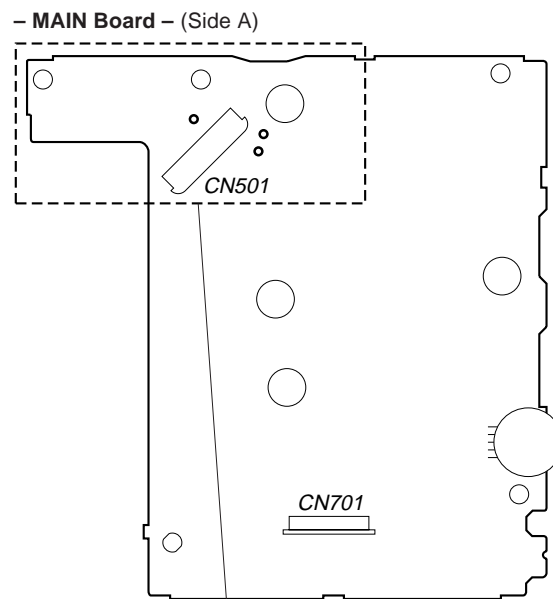


To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watching.

8. Stop revolving of the disc motor by pressing the ■ key.
9. After the completion of check, reset service mode. (See page 7)

Connection Location: MAIN board (See page 10)

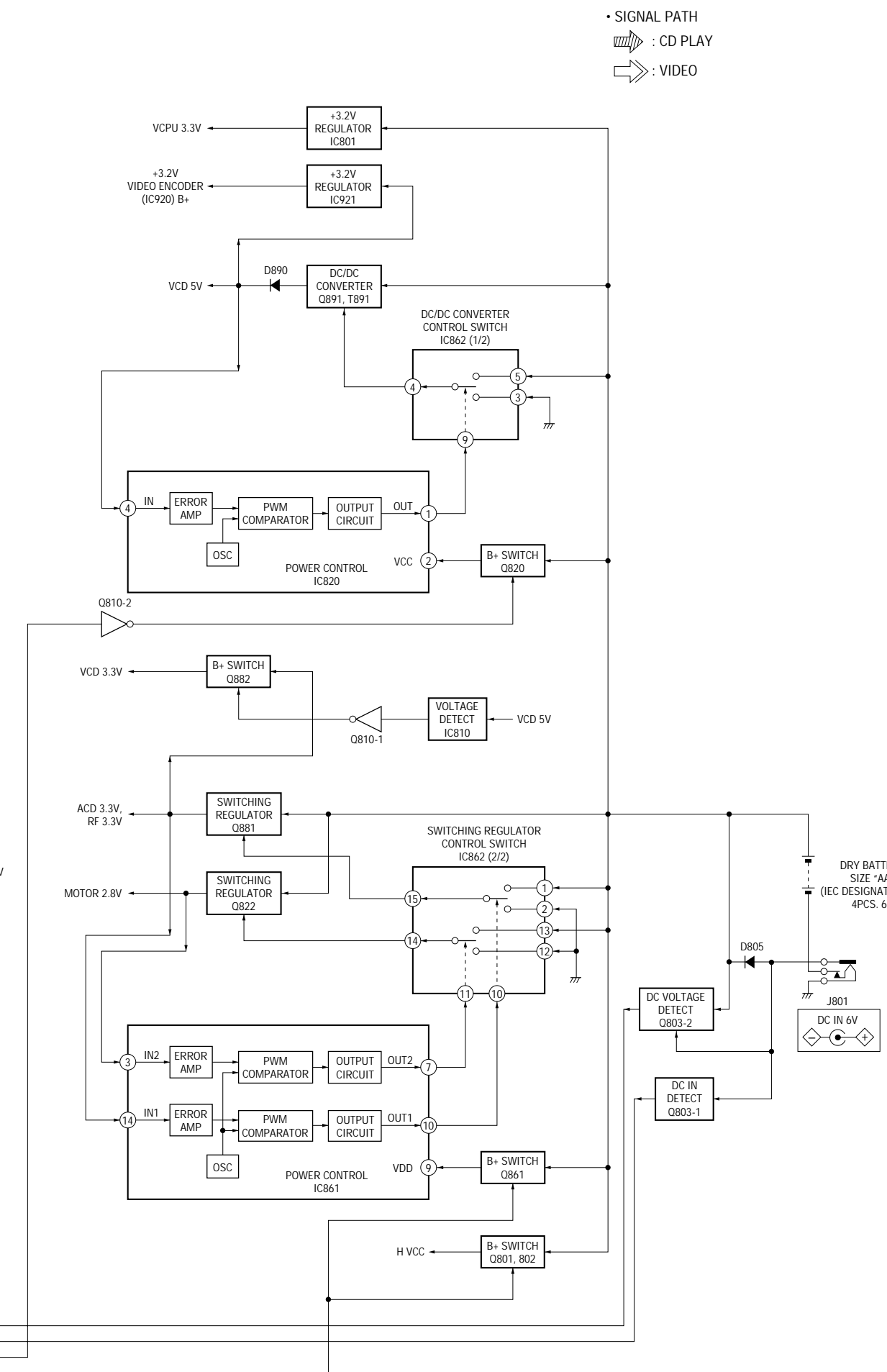
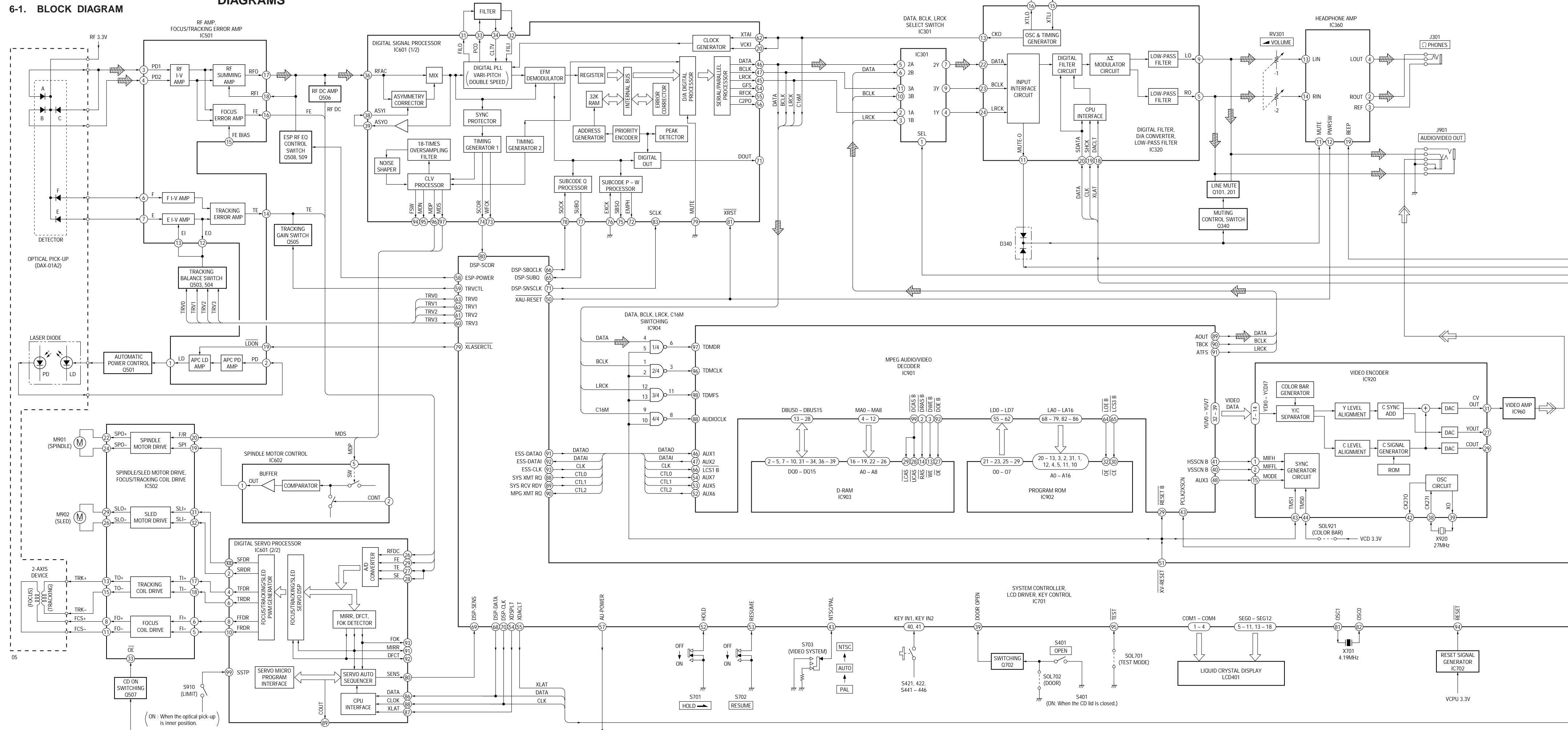
Connection Location



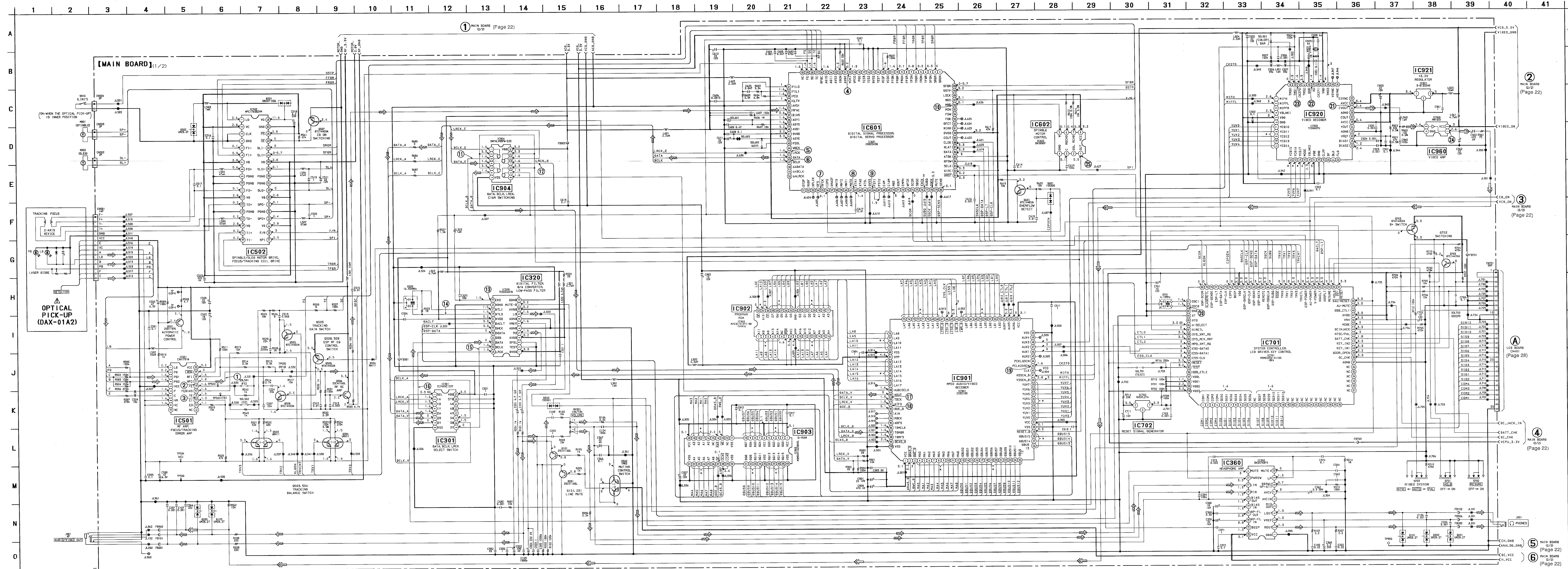
6-1. BLOCK DIAGRAM

SECTION 6

DIAGRAMS



6-2. SCHEMATIC DIAGRAM – MAIN Board (1/2) – • See page 30 for Waveforms. • See page 33 for IC Block Diagrams.

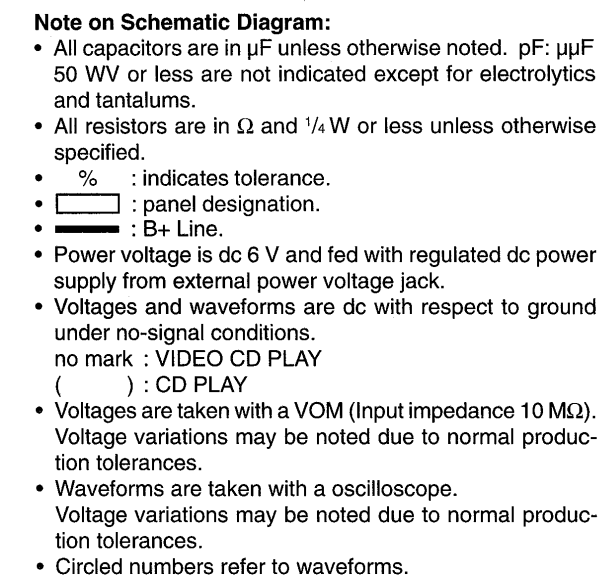


Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : μpF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- \square : panel designation.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- — : B+ Line.
- Power voltage is dc 6 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark : VIDEO CD PLAY
- () : CD PLAY
- * : Impossible to measure
- Voltages are taken with a VOM (input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path
- \Rightarrow : VIDEO
- \Rightarrow : CD PLAY



6-4. PRINTED WIRING BOARD – MAIN Board –

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	I-11	IC902	E-12
D105	B-14	IC903	F-11
D201	H-10	IC904	D-12
D205	A-14	IC920	G-14
D302	I-11	IC921	G-15
D340	G-10	IC960	G-15
D501	D-15		
D502	C-15	Q101	B-14
D504	D-14	Q201	A-14
D601	C-12	Q340	B-4
D805	B-1	Q501	B-15
D808	B-16	Q503	B-14
D820	E-15	Q504	B-14
D880	G-15	Q505	C-13
D890	H-15	Q506	D-14
D891	H-4	Q507	E-15
		Q508	C-14
		Q509	D-14
IC301	B-10	Q601	D-12
IC320	C-11	Q702	H-4
IC360	H-11	Q703	I-4
IC501	B-14	Q801	I-11
IC502	D-14	Q802	I-7
IC601	C-12	Q803	B-17
IC602	D-13	Q810	G-4
IC701	H-12	Q820	I-4
IC702	I-14	Q822	E-15
IC801	I-14	Q861	G-3
IC810	H-4	Q881	G-15
IC820	I-15	Q882	G-4
IC861	F-15	Q891	H-3
IC862	F-14		
IC901	F-12		

Note on Printed Wiring Board:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Through hole.
- △ : internal component.
- Pattern from the side which enables seeing.

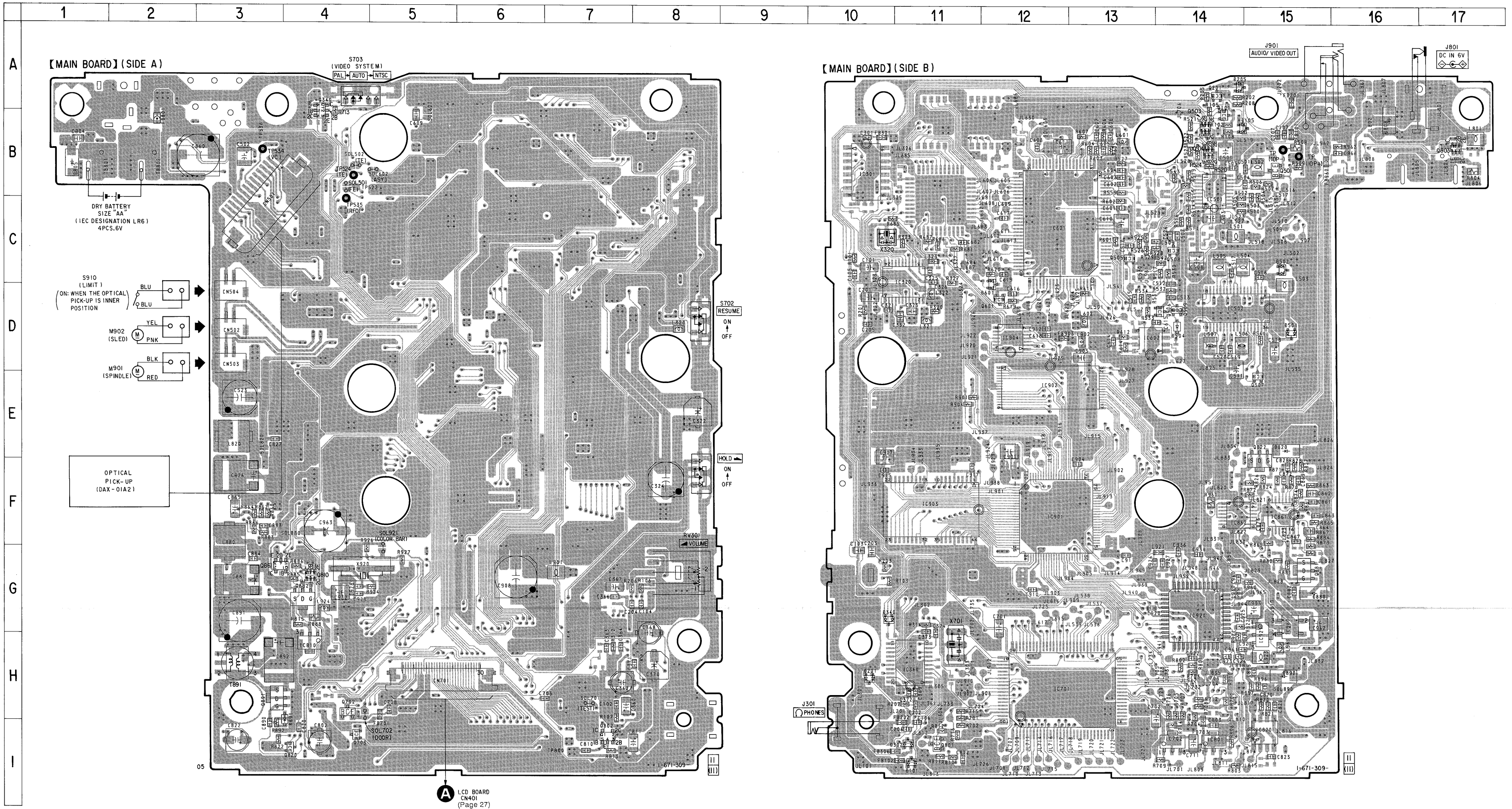
(The other layers' patterns are not indicated.)

Caution:

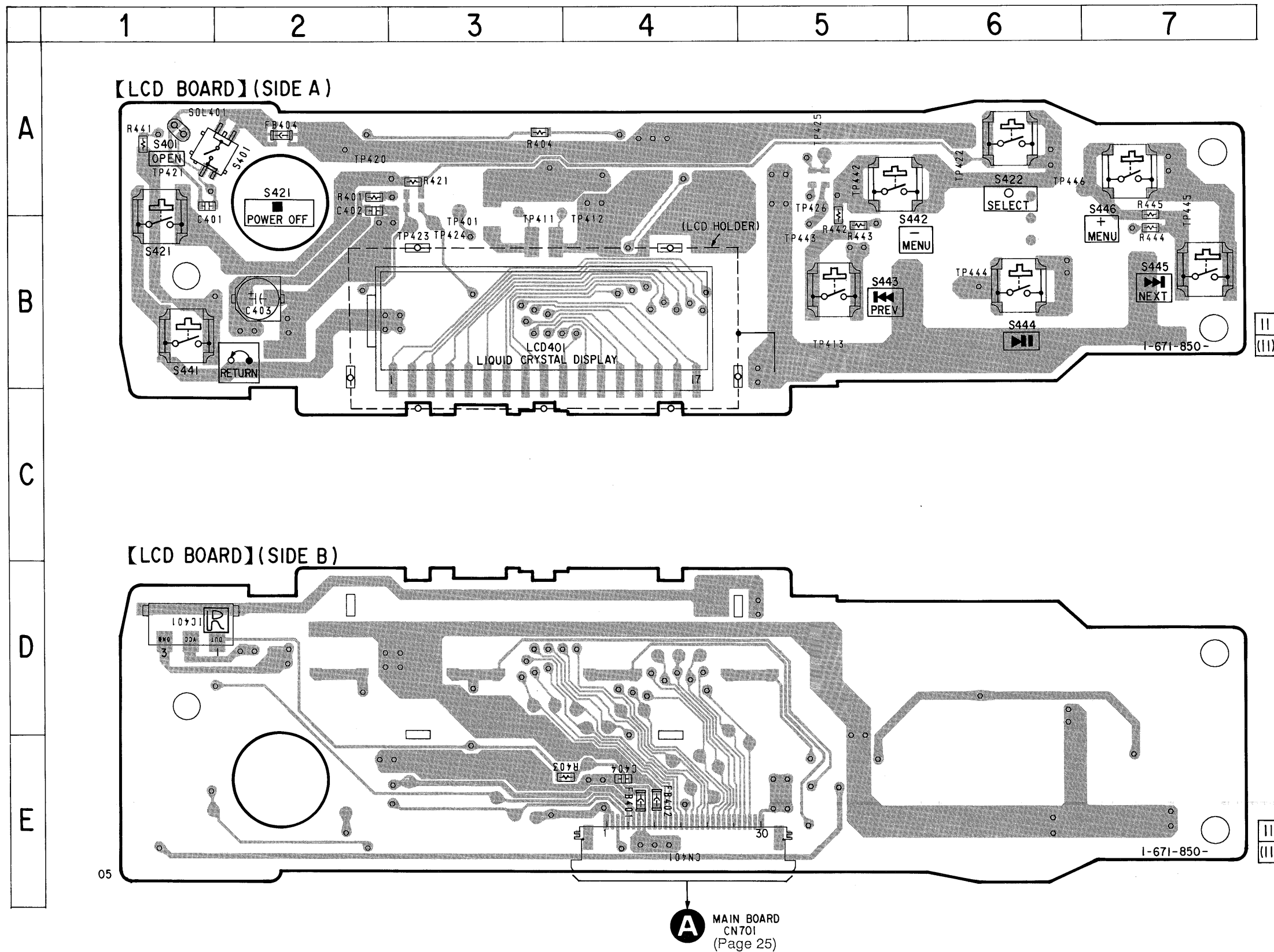
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: Parts on the parts face side seen from the parts face are indicated.

• This board is multi-layer printed board.
However, the patterns of intermediate-layer have not been included in the diagram.



6-5. PRINTED WIRING BOARD – LCD Board –

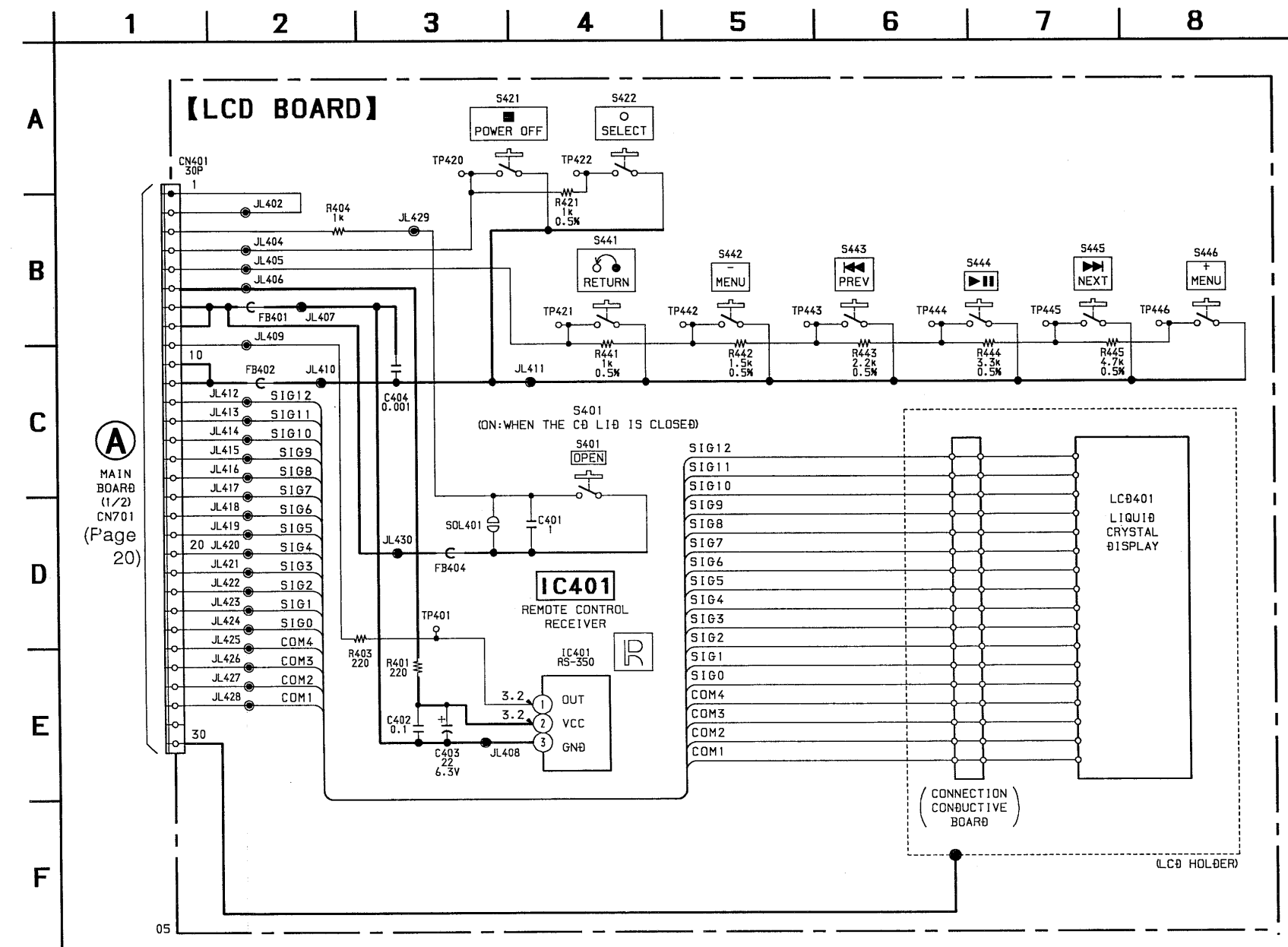
**Note on Printed Wiring Board:**

- — : parts extracted from the component side.
- — : parts extracted from the conductor side.
- ○ : Through hole.
- : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

Caution:

Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
 Parts face side: Parts on the parts face side seen from the parts face are indicated.

6-6. SCHEMATIC DIAGRAM – LCD Board –

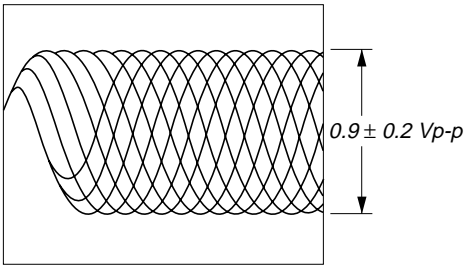
**Note on Schematic Diagram:**

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{ W}$ or less unless otherwise specified.
- % : indicates tolerance.
- : panel designation.
- : B+ Line.
- Power voltage is dc 6 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : VIDEO CD PLAY
- Voltages are taken with a VOM (Input impedance 10 $\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.

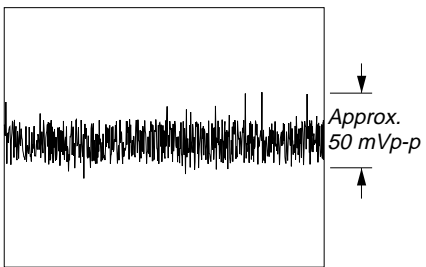
• Waveforms

– MAIN Board (1/2) –

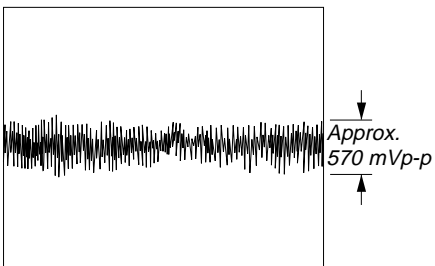
① IC501 ⑰ (RFO)
200 mV/DIV, 500 ns/DIV



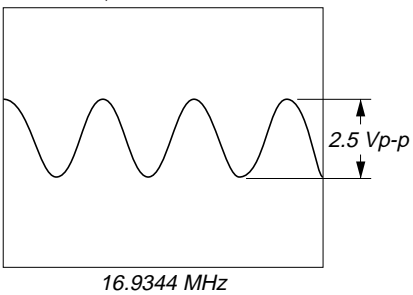
② IC501 ⑱ (FE)
50 mV/DIV, 5 ms/DIV



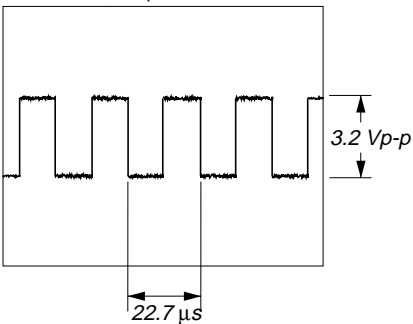
③ IC501 ⑭ (TE)
200 mV/DIV, 5 ms/DIV



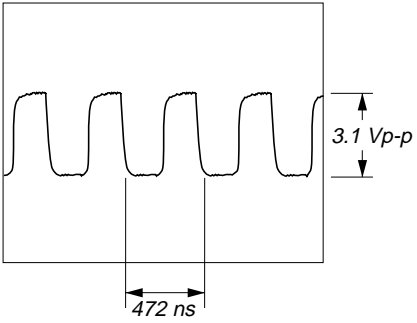
④ IC601 ⑳ (VCKI)
1 V/DIV, 20 ns/DIV



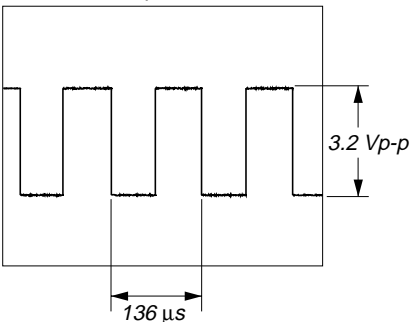
⑤ IC601 ㉔ (LRCK)
1 V/DIV, 10 μs/DIV



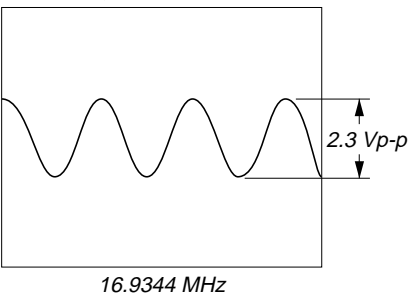
⑥ IC601 ㉗ (BCLK)
1 V/DIV, 200 ns/DIV



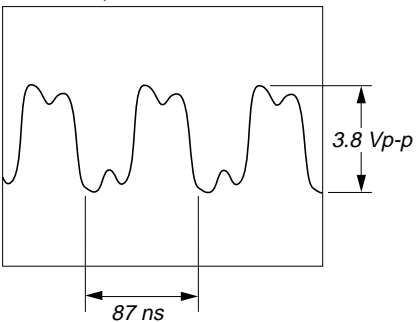
⑦ IC601 ㉙ (RFCK)
1 V/DIV, 50 μs/DIV



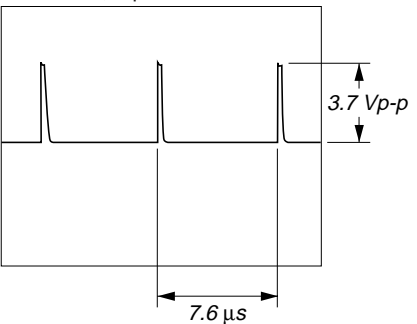
⑧ IC601 ㉚ (XTAI)
1 V/DIV, 20 ns/DIV



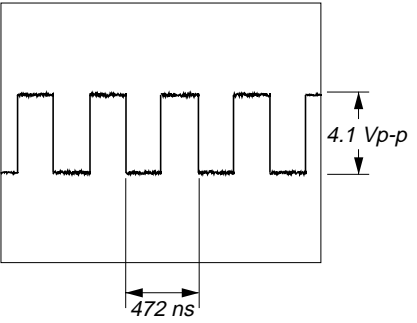
⑨ IC601 ㉛ (FSTI)
2 V/DIV, 50 ns/DIV



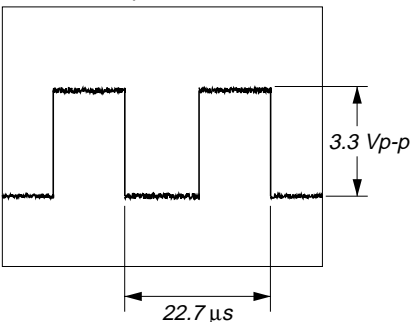
⑩ IC601 ㉞ (MDP)
2 V/DIV, 2 μs/DIV



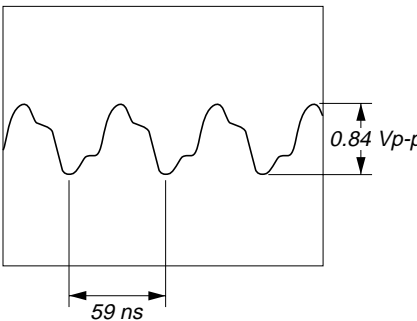
⑪ IC904 ③
2 V/DIV, 200 ns/DIV



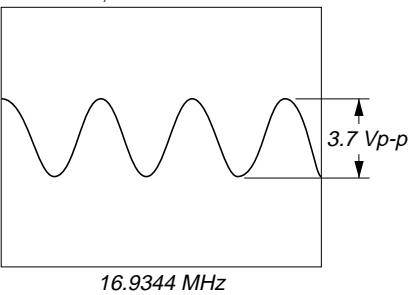
⑫ IC904 ⑪
2 V/DIV, 5 μs/DIV



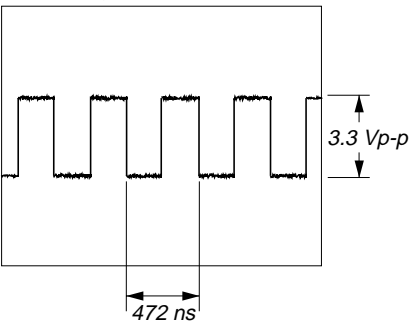
⑬ IC320 ⑬ (CKO)
2 V/DIV, 20 ns/DIV



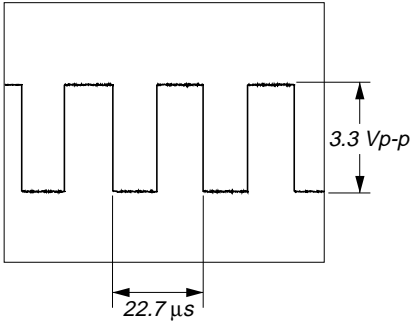
⑭ IC320 ⑯ (XTLO)
2 V/DIV, 20 ns/DIV



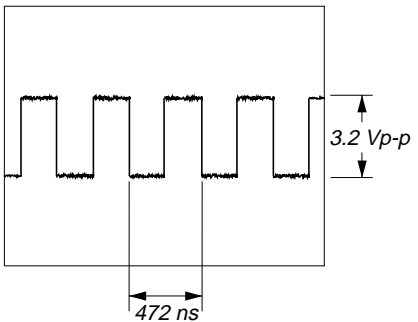
⑮ IC320 ㉓ (BCLK)
2 V/DIV, 200 ns/DIV



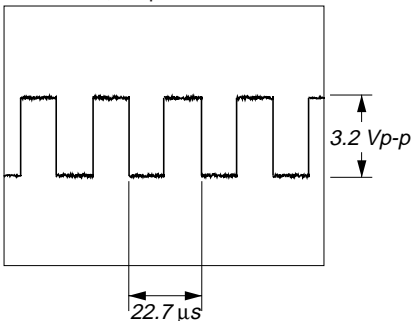
⑯ IC320 ㉔ (LRCK)
1 V/DIV, 10 μs/DIV



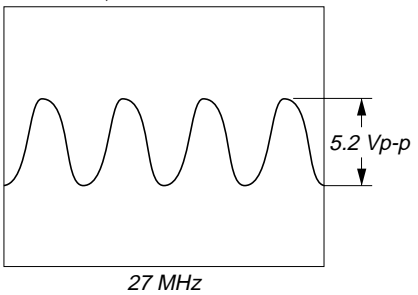
⑰ IC901 ㉙ (TBCK)
1 V/DIV, 200 ns/DIV



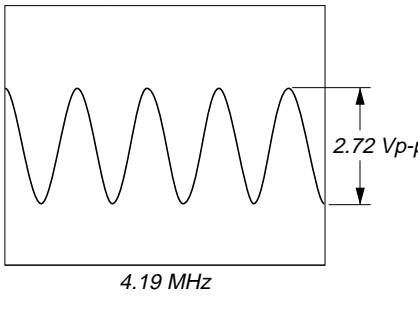
⑱ IC901 ㉚ (ATFS)
1 V/DIV, 10 μs/DIV



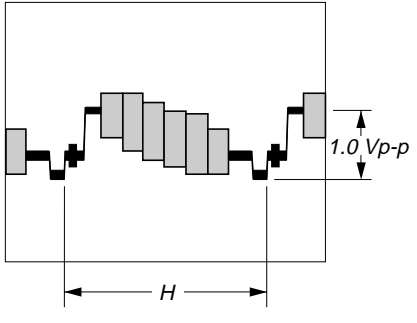
⑲ IC901 ㉛ (PCLK2XSCN)
2 V/DIV, 1 ms/DIV



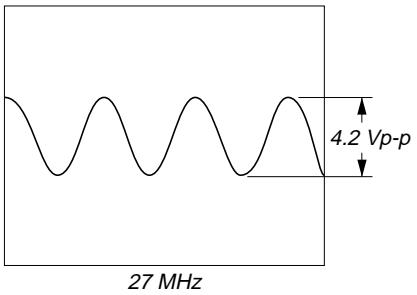
㉒ IC701 ㉚ (OSC0)
1 V/DIV, 100 ns/DIV



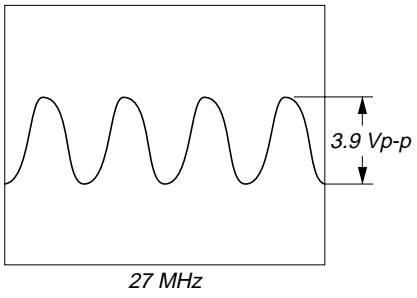
㉔ IC920 ㉙ (CVOU)
500 mV/DIV, 20 μs/DIV



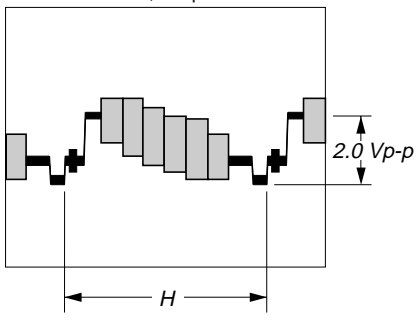
㉚ IC920 ㉙ (XO)
2 V/DIV, 20 ns/DIV



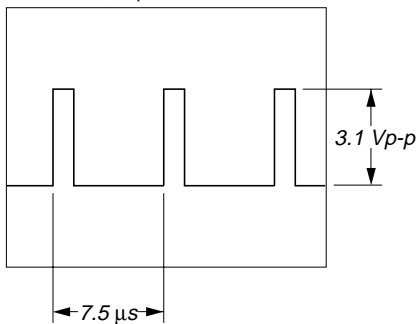
㉛ IC920 ㉚ (CK270)
2 V/DIV, 20 ns/DIV



㉜ IC960 ① (OUT)
500 mV/DIV, 20 μs/DIV

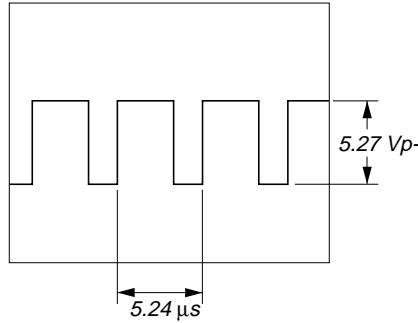


㉝ IC602 ① (OUT)
1 V/DIV, 2 μs/DIV

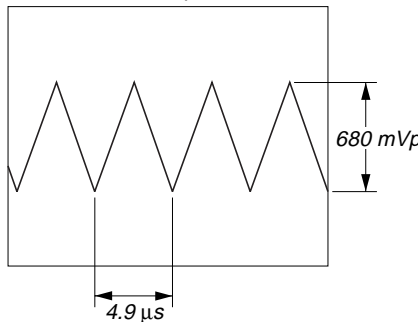


– MAIN Board (2/2) –

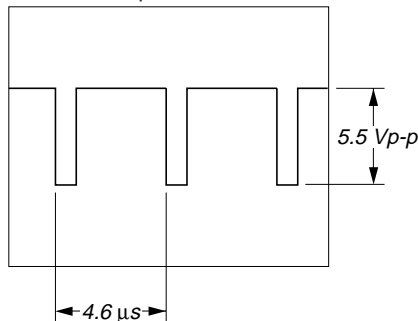
㉞ IC820 ① (OUT)
2 V/DIV, 2 μs/DIV



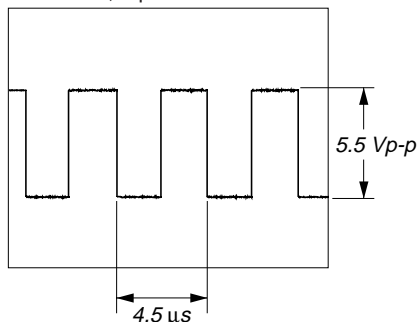
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200 mV/DIV, 2 μs/DIV



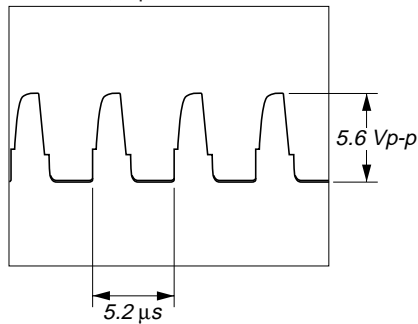
㊱ IC861 ② (OUT1)
2 V/DIV, 2 μs/DIV



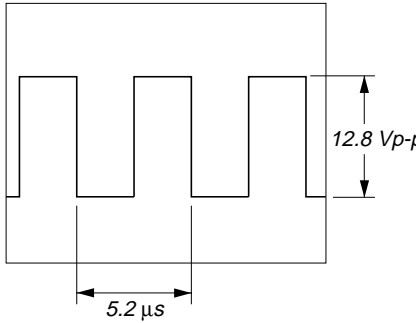
㊲ IC861 ㉙ (OUT2)
2 V/DIV, 2 μs/DIV



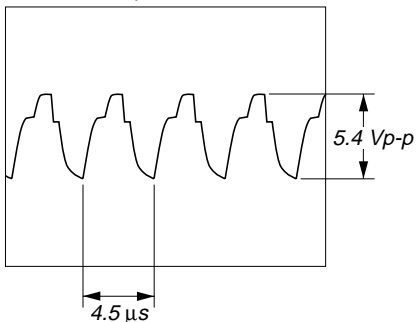
㊳ Q891 ㉙
2 V/DIV, 2 μs/DIV



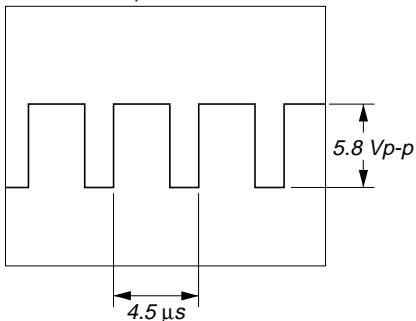
㊴ T891 ④
5 V/DIV, 2 μs/DIV



㊵ Q881 ㉙
2 V/DIV, 2 μs/DIV



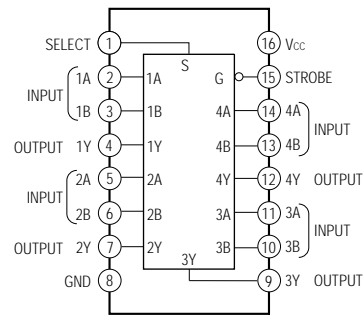
㊶ Q881 ㉙
2 V/DIV, 2 μs/DIV



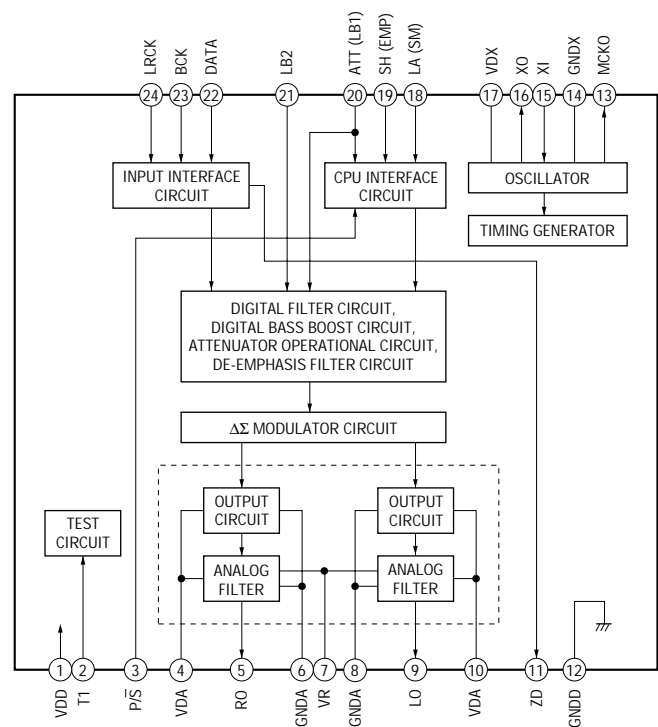
• IC Block Diagrams

– MAIN Board (1/2) –

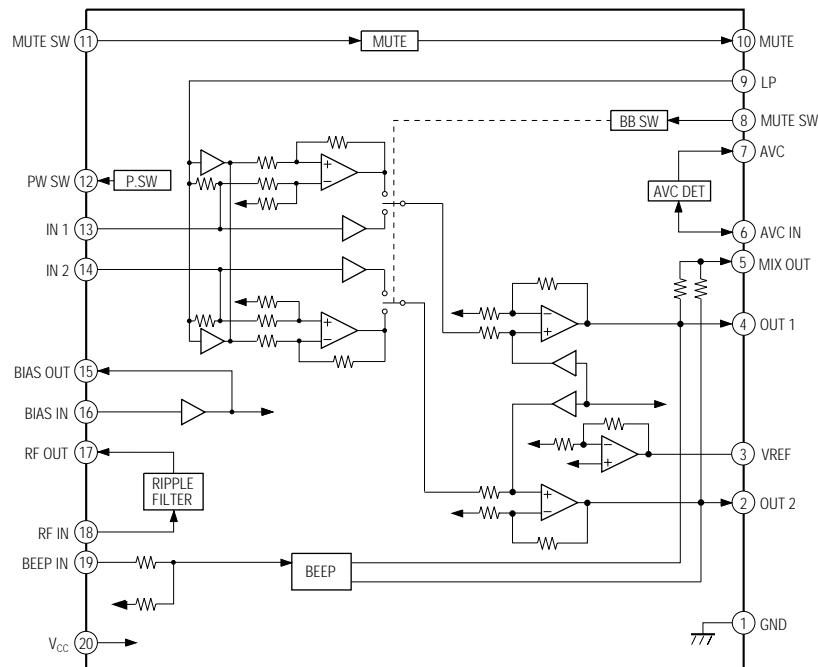
IC301 TC74VHC157F



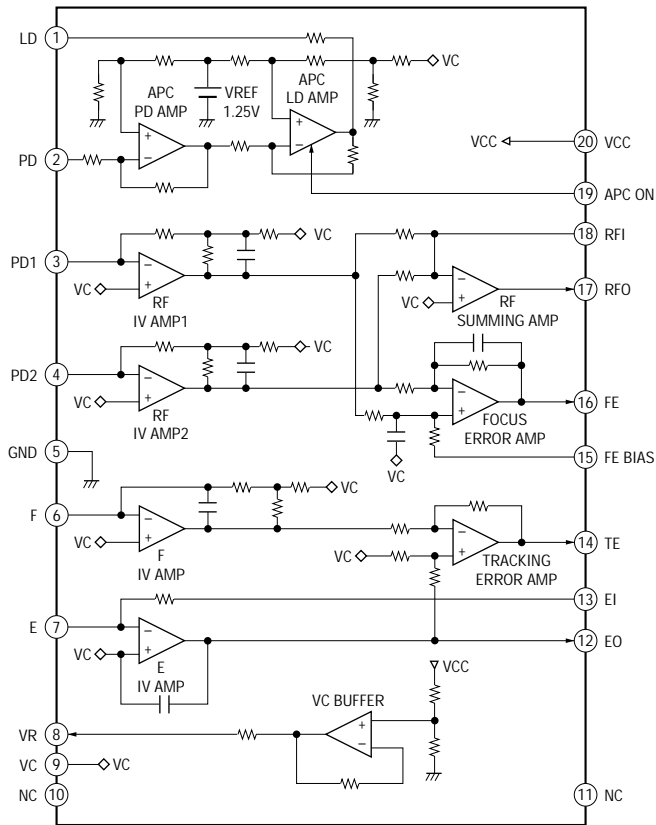
IC320 TC9434AFNEL



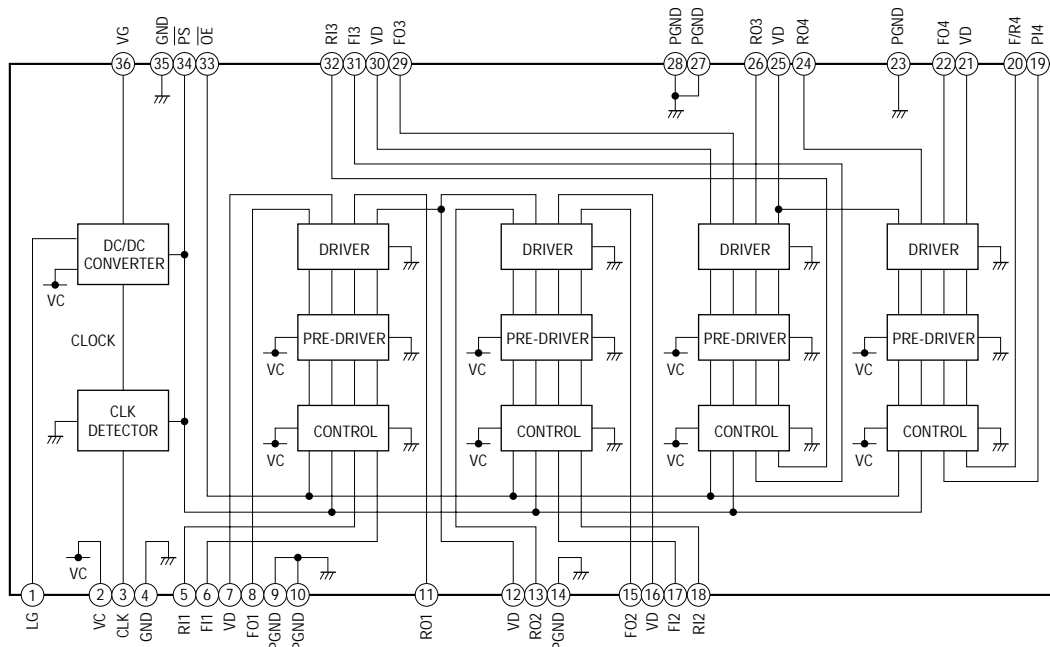
IC360 BA3574BFS



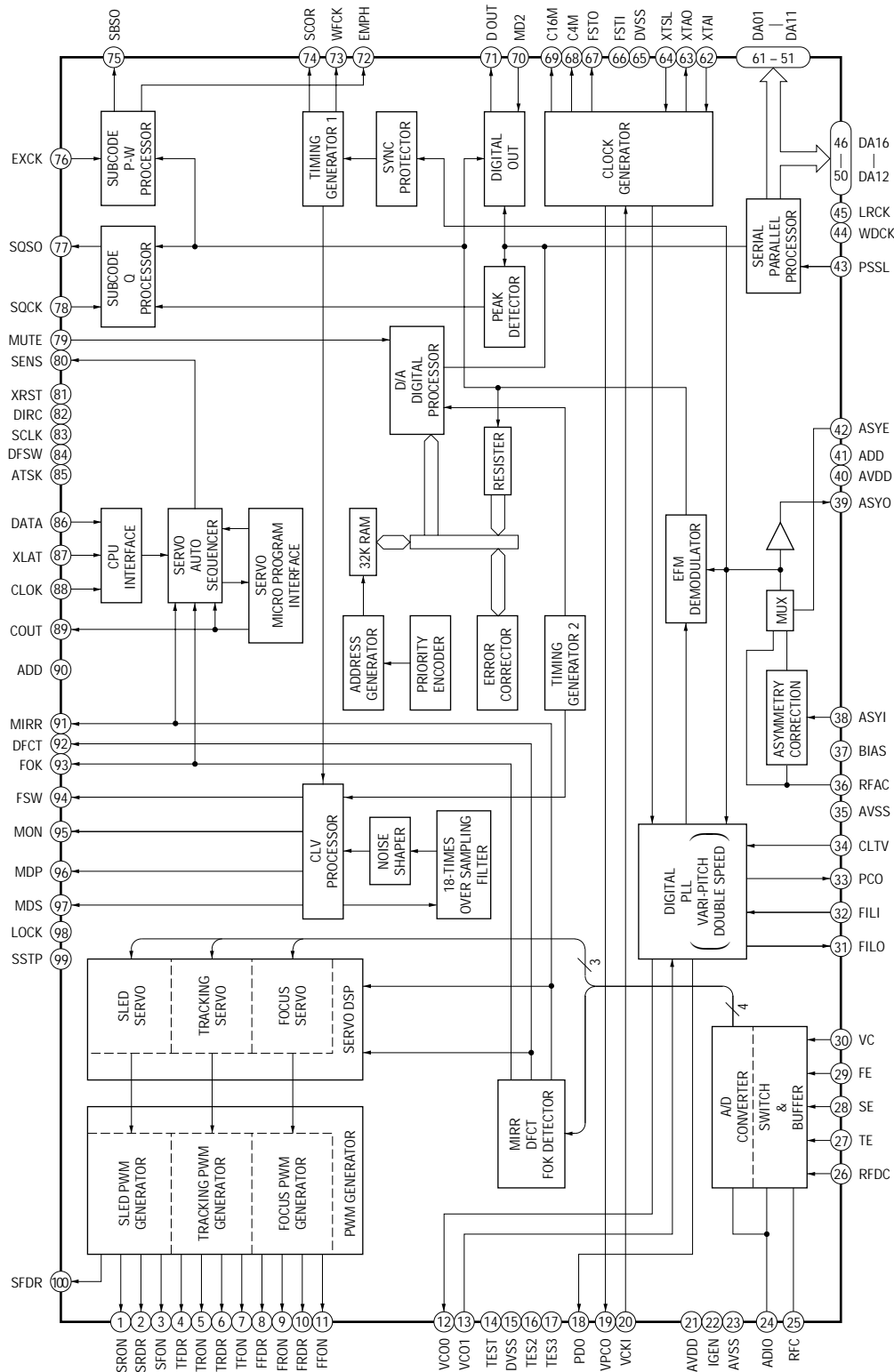
IC501 CXA1791N



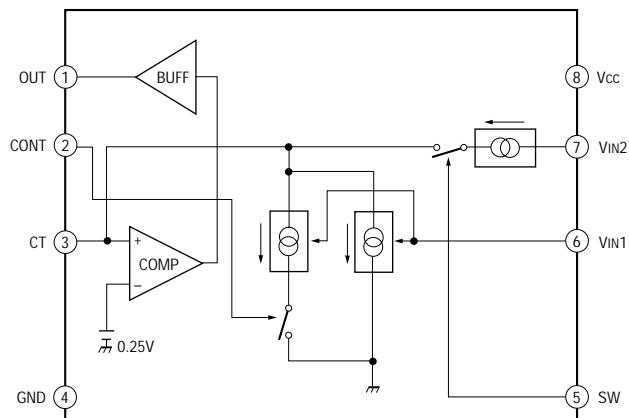
IC502 MPC17A38ZVMEL



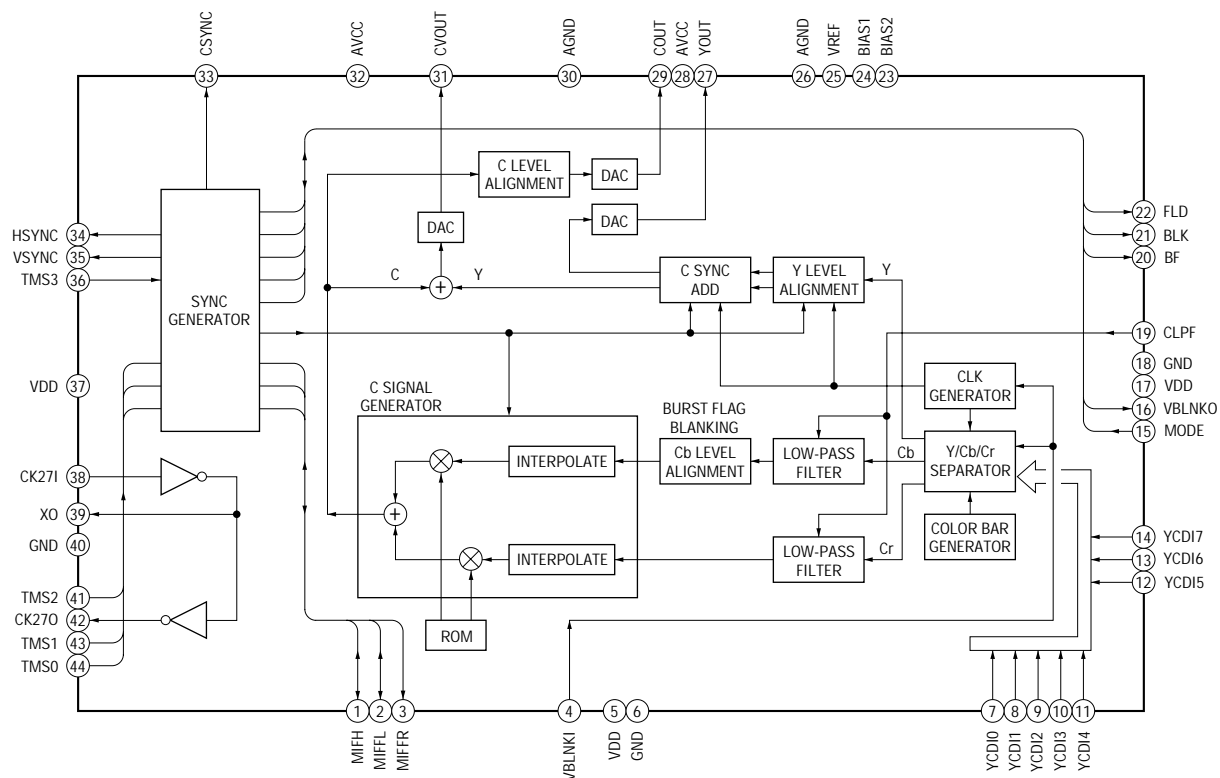
IC601 CXD2545Q



IC602 BA3890F

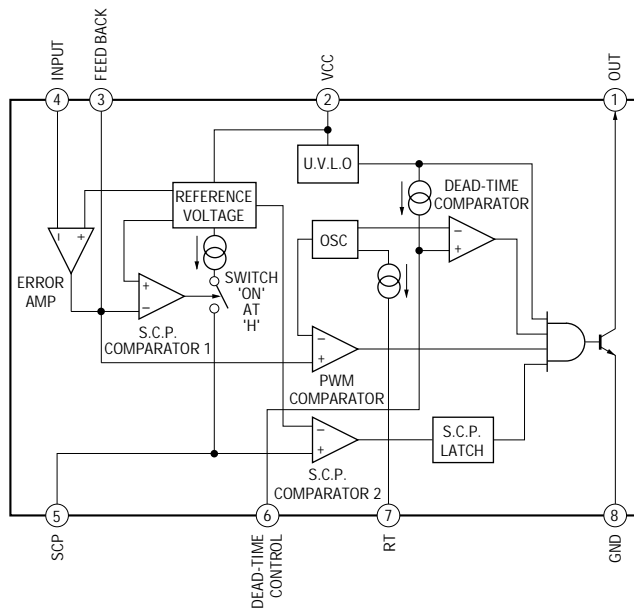


IC920 TC90A07U

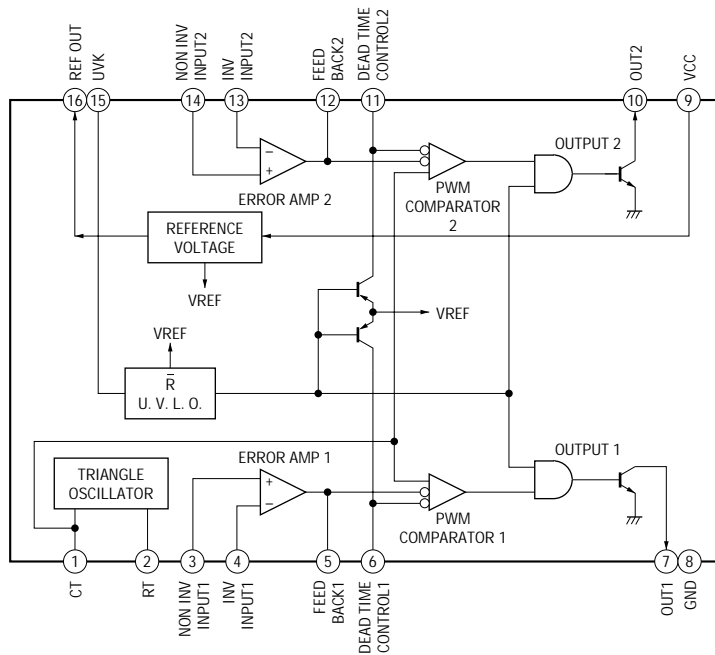


– MAIN Board (2/2) –

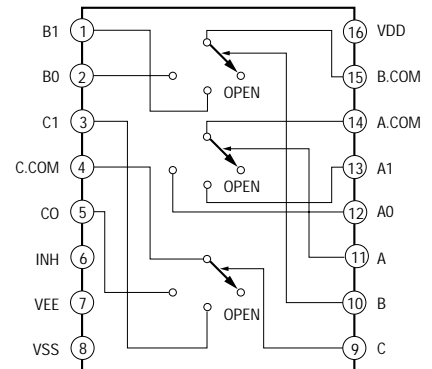
IC820 TL5001CD



IC861 TL1453CPW-E20



IC862 MC14053BDTR2



6-7. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC601 CXD2545Q (DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR)

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled servo drive PWM signal output terminal Not used (open)
2	SRDR	O	Sled servo drive PWM signal (–) output to the MPC17A38ZVMEL (IC502)
3	SFON	O	Sled servo drive PWM signal output terminal Not used (open)
4	TFDR	O	Tracking servo drive PWM signal (+) output to the MPC17A38ZVMEL (IC502)
5	TRON	O	Tracking servo drive PWM signal output terminal Not used (open)
6	TRDR	O	Tracking servo drive PWM signal (–) output to the MPC17A38ZVMEL (IC502)
7	TFON	O	Tracking servo drive PWM signal output terminal Not used (open)
8	FFDR	O	Focus servo drive PWM signal (+) output to the MPC17A38ZVMEL (IC502)
9	FRON	O	Focus servo drive PWM signal output terminal Not used (open)
10	FRDR	O	Focus servo drive PWM signal (–) output to the MPC17A38ZVMEL (IC502)
11	FFON	O	Focus servo drive PWM signal output terminal Not used (open)
12	VCOO	O	Oscillator circuit output terminal for analog PLL of the playback EFM
13	VCOI	I	Oscillator circuit input terminal for analog PLL of the playback EFM
14	TEST	I	Input terminal for the test (fixed at “L”)
15	DVSS	—	Ground terminal (digital system)
16	TES2	I	Input terminal for the test (fixed at “L”)
17	TES3	I	Input terminal for the test (fixed at “L”)
18	PDO	O	Charge-pump output terminal for analog PLL of the playback EFM Not used (open)
19	VPCO	O	PLL charge-pump output terminal for the variable pitch Not used (open)
20	VCKI	I	Master clock signal (16.9344 MHz) input from the D/A converter (IC320) for the variable pitch
21	AVD2	—	Power supply terminal (+3.3V) (analog system)
22	IGEN	I	Power supply terminal (+3.3V) (for operational amplifier)
23	AVS2	—	Ground terminal (analog system)
24	ADII	I	Input terminal for the A/D converter Not used (open)
25	ADIO	O	Output terminal of the operational amplifier Not used (open)
26	RFDC	I	RF signal (DC level) input terminal for the digital servo process
27	TE	I	Tracking error signal input from the CXA1791N (IC501)
28	SE	I	Sled error signal input from the CXA1791N (IC501)
29	FE	I	Focus error signal input from the CXA1791N (IC501)
30	VC	I	Middle point voltage (+1.65V) input from the CXA1791N (IC501)
31	FILO	O	Filter output terminal for master clock of the playback master PLL
32	FILI	I	Filter input terminal for master clock of the playback master PLL
33	PCO	O	Phase comparison output terminal for master clock of the playback EFM master PLL
34	CLTV	I	Internal VCO control voltage input of the playback master PLL
35	AVS1	—	Ground terminal (analog system)
36	RFAC	I	RF signal (AC level) input terminal for the EFM demodulator
37	BIAS	I	Constant current input terminal of the playback EFM asymmetry circuit
38	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
39	ASYO	O	Playback EFM full-swing output terminal
40	AVD1	—	Power supply terminal (+3.3V) (analog system)
41	DVDD	—	Power supply terminal (+3.3V) (digital system)
42	ASYE	I	Playback EFM asymmetry circuit on/off selection input terminal (fixed at “H”)
43	PSSL	I	Audio data output mode selection input terminal (fixed at “L”)
44	WDCK	O	Word clock signal (88.2 kHz) output terminal Not used (open)
45	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the D/A converter (IC320) and MPEG audio/video decoder (IC901)

Pin No.	Pin Name	I/O	Function
46	DATA	O	DA16 output when PSSL="H", 48-bit slot serial data output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Serial data output to the D/A converter (IC320) and MPEG audio/video decoder (IC901)
47	BCLK	O	DA15 output when PSSL="H", 48-bit slot bit clock signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Bit clock signal (2.8224 MHz) output to the D/A converter (IC320) and MPEG audio/video decoder (IC901)
48	64 DATA	O	DA14 output when PSSL="H", 64-bit slot serial data output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
49	64 BCLK	O	DA13 output when PSSL="H", 64-bit slot bit clock signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
50	64 LRCK	O	DA12 output when PSSL="H", 64-bit slot L/R sampling clock signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
51	GTOP	O	DA11 output when PSSL="H", GTOP signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
52	XUGF	O	DA10 output when PSSL="H", XUGF signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
53	XPLCK	O	DA09 output when PSSL="H", XPLCK signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
54	GFS	O	DA08 output when PSSL="H", GFS (guard frame sync) signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
55	RFCK	O	DA07 output when PSSL="H", RFCK (read frame clock) signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
56	C2PO	O	DA06 output when PSSL="H", C2PO signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used
57	XRAOF	O	DA05 output when PSSL="H", XRAOF (RAM over flow) signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
58	MNT3	O	DA04 output when PSSL="H", MNT3 (monitor 3) signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
59	MNT2	O	DA03 output when PSSL="H", MNT2 (monitor 2) signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
60	MNT1	O	DA02 output when PSSL="H", MNT1 (monitor 1) signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
61	MNT0	O	DA01 output when PSSL="H", MNT0 (monitor 0) signal output when PSSL="L" (PSSL (pin ④③)=fixed at "L") Not used (open)
62	XTAI	I	Master clock signal (16.9344 MHz) input from the D/A converter (IC320)
63	XTAO	O	Master clock output terminal (16.9344 MHz) Not used (open)
64	XTSL	I	Master clock selection input terminal (fixed at "L")
65	DVSS	—	Ground terminal (digital system)
66	FSTI	I	2/3 divider input terminal of pins ⑥② (XATI) and ⑥③ (XTAO)
67	FSTO	O	2/3 divider output terminal of pins ⑥② (XATI) and ⑥③ (XTAO)
68	C4M	O	4.2336 MHz clock signal output terminal Not used (open)
69	C16M	O	16.9344 MHz clock signal output terminal Not used (open)
70	MD2	I	Digital out on/off control signal input terminal Fixed at "H" in this set
71	DOUT	O	Digital signal (for coaxial out and optical out) output terminal Not used (open)
72	EMPH	O	Emphasis control signal output terminal Not used (open)
73	WFCK	O	Write frame clock signal output terminal Not used (open)
74	SCOR	O	Sub-code sync (S0+S1) detection signal output to the system controller (IC701)
75	SBSO	O	Sub-code P-W serial data output terminal Not used (open)
76	EXCK	I	Sub-code P-W serial data reading clock signal input terminal Not used (fixed at "L")
77	SUBQ	O	Sub-code Q data signal output to the system controller (IC701)
78	SQCK	I	Sub-code Q data reading clock signal input from the system controller (IC701)

Pin No.	Pin Name	I/O	Function
79	MUTE	I	Mute signal input terminal Fixed at “L” in this set
80	SENS	O	Internal status (SENSE) signal output to the system controller (IC701)
81	$\overline{\text{XRST}}$	I	Reset signal input from the system controller (IC701) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
82	DIRC	I	1-track jump mode input terminal Not used (fixed at “H”)
83	SCLK	I	Sense serial data reading clock signal input from the system controller (IC701)
84	DFSW	I	Defect on/off select signal input terminal Not used (fixed at “L”)
85	ATSK	I	Input terminal for the anti-shock Not used (fixed at “L”)
86	DATA	I	Serial data input from the system controller (IC701)
87	XLAT	I	Serial data latch pulse signal input from the system controller (IC701)
88	CLOK	I	Serial data transfer clock signal input from the system controller (IC701)
89	COUT	O	Track number count signal output terminal Not used (open)
90	DVDD	—	Power supply terminal (+3.3V) (digital system)
91	MIRR	O	Mirror detection signal output terminal Not used (open)
92	DFCT	O	Defect signal output terminal Not used (open)
93	FOK	O	Focus OK signal output terminal Not used (open)
94	FSW	O	Selection signal output terminal of the output filter for spindle motor Not used (open)
95	MON	O	Spindle motor on/off control signal output terminal Not used (open)
96	MDP	O	Spindle servo control signal output to the BA3890F (IC602)
97	MDS	O	Spindle servo control signal output to the BA3890F (IC602)
98	LOCK	O	GFS is sampled by 460 Hz “H” output when GFS is “H” Not used (open)
99	SSTP	I	Detection input from the sled limit-in detect switch (S910) The optical pick-up is inner position when “H”
100	SFDR	O	Sled servo drive PWM signal (+) output to the MPC17A38ZVMEL (IC502)

• MAIN BOARD IC701 MSM65354-412GS-BK4 (SYSTEM CONTROLLER, LCD DRIVER, KEY CONTROL)

Pin No.	Pin Name	I/O	Function
1 to 4	COM1 to COM4	O	Common drive signal output to the liquid crystal display (LCD401)
5 to 11	SEG0 to SEG6	O	Segment drive signal output to the liquid crystal display (LCD401)
12	NC	O	Not used (open)
13 to 18	SEG7 to SEG12	O	Segment drive signal output to the liquid crystal display (LCD401)
19 to 36	NC	O	Not used (open)
37	AGND	—	Ground terminal (analog system)
38	DC CHK	I	DC in voltage detection input terminal (A/D input) Also used for DC IN detection
39	DOOR OPEN	I	CD lid open/close detection switch (S401) input terminal The stop status is reset with the falling edge of input signal “H”: CD lid open, “L”: CD lid close
40	KEY IN1	I	Key input terminal (A/D input) RETURN, MENU –, PREV ◀◀, ▶▶, NEXT ▶▶, MENU + keys input (S441 to S446)
41	KEY IN2	I	Key input terminal (A/D input) ■ POWER OFF, SELECT keys input (S421 and S422)
42	BATT CHK	I	Battery voltage detection input terminal
43	NTSC/PAL	I	Video system select switch (S703) input terminal “L”: NTSC, “H”: AUTO
44	DCINJACK	I	DC IN 6V jack (J801) detection input terminal “L”: plug in
45	MODE	I	Fixed at “L” in this set
46	VRH	I	Reference voltage input terminal (+3.3V) (for A/D converter)
47	AVDD	—	Power supply terminal (+3.3V) (analog system)
48	DBB CTL1	O	MEGA BASS on/off control signal output terminal “L”: MEGA BASS on (level-1 and level-2) Not used (open)
49	AU-MUTE	O	Analog line mute control signal output terminal “H”: mute on
50	XAU-RESET	O	Reset signal output to the CXD2545Q (IC601) and headphone amplifier (IC360) “L”: reset
51	XV-RESET	O	Reset signal output to the MPEG audio/video decoder (IC901) and video encoder (IC920) “L”: reset
52	HOLD	I	HOLD switch (S701) input terminal “L”: hold off, “H”: hold on
53	RESUME	I	RESUME switch (S702) input terminal “L”: resume off, “H”: resume on
54	XDSPLT	O	Serial data latch pulse signal output to the CXD2545Q (IC601)
55	XDACLT	O	Serial data latch pulse signal output to the D/A converter (IC320)
56	V-POWER	O	Video CD system power supply on/off control signal output terminal “L”: power on
57	AU-POWER	O	Audio CD system power supply on/off control signal output terminal “L”: power on
58	ESP-POWER	O	Control signal output to the ESP (Electronic Shock Protection) circuit
59	TRVCTL	O	Tracking gain control signal output terminal
60 to 63	TRV3 to TRV0	O	Tracking balance control signal output terminal
64	XSOE	O	Serial data output enable signal output terminal Not used (open)
65	DSP-SUBQ	I	Sub-code Q data signal input from the CXD2545Q (IC601)
66	DSP-SBQCLK	O	Sub-code Q data reading clock signal output to the CXD2545Q (IC601)
67	REMOTE	I	Sircs remote control signal input from the remote control receiver (IC401)
68	DSP-DATA	O	Serial data output to the CXD2545Q (IC601) and D/A converter (IC320)
69	DSP-SENS	I	Internal status (SENSE) signal input from the CXD2545Q (IC601)
70	DSP-CLK	O	Serial data transfer clock signal output to the CXD2545Q (IC601) and D/A converter (IC320)
71	DSP-SNSCLK	O	Sense serial data reading clock signal output to the CXD2545Q (IC601)
72	VDD	—	Power supply terminal (+3.3V) (digital system)
73	BEEP	O	Beep sound drive signal output terminal
74	C2PO	O	C2PO signal control output terminal “L”: stop mode, “H”: searching Not used
75	ESP-CLK	O	Serial data transfer clock signal output terminal Not used (open)

Pin No.	Pin Name	I/O	Function
76	ESP-DATA	O	Serial data output terminal Not used (open)
77	ESP-LT	O	Serial data latch pulse signal output terminal Not used (open)
78	ESP-SENSE	I	Sense serial data input terminal Not used (open)
79	$\overline{\text{XLASERCTL}}$	O	Laser diode on/off control signal output to the CXA1791N (IC501) “L”: laser on
80	DSP-SCOR	I	Sub-code sync (S0+S1) detection signal input from the CXD2545Q (IC601)
81	OSC1	O	Main system clock output terminal (4.19 MHz)
82	OSC0	I	Main system clock input terminal (4.19 MHz)
83	GND	—	Ground terminal (digital system)
84	XT	I	Sub system clock input terminal Not used (fixed at “L”)
85	XTO	O	Sub system clock output terminal Not used (open)
86	A-SELECT	O	Selection signal output to the DATA, BCLK, LRCK signal select switch (IC301) “L”: CD play, “H”: video CD play
87	XIRCTL	O	Power supply on/off control signal for the remote control receiver (IC401) “L”: power on
88	SYS XMT RQ	O	Communication request signal output to the MPEG audio/video decoder (IC901)
89	SYS RCV RDY	O	Ready signal output to the MPEG audio/video decoder (IC901)
90	MPG XMT RQ	I	Communication request signal input from the MPEG audio/video decoder (IC901)
91	ESS-DATAO	O	Serial data output to the MPEG audio/video decoder (IC901)
92	ESS-DATAI	I	Serial data input from the MPEG audio/video decoder (IC901)
93	ESS-CLK	O	Serial data transfer clock signal output to the MPEG audio/video decoder (IC901)
94	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC702) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
95	$\overline{\text{TEST}}$	I	Service mode setting terminal The stop status is reset with the falling edge of input signal “L”: service mode, Normally: “H”
96	DBB CTL2	O	MEGA BASS level control signal output terminal “L”: MEGA BASS level-1, “H”: MEGA BASS level-2 Not used (open)
97	VDDL	—	Power supply output for the liquid crystal display bias
98 to 100	VDD1 to VDD3	—	Power supply output for the liquid crystal display bias

• MAIN BOARD IC901 ES3210 (MPEG AUDIO/VIDEO DECODER)

Pin No.	Pin Name	I/O	Function
1	VCC	—	Power supply terminal (+3.3V)
2	$\overline{\text{DRAS B}}$	O	Row address strobe signal output to the D-RAM (IC903) “L” active
3	$\overline{\text{DWE B}}$	O	Write enable signal output to the D-RAM (IC903) “L” active
4 to 12	MA0 to MA8	O	Address signal output to the D-RAM (IC903)
13 to 28	DBUS0 to DBUS15	I/O	Two-way data bus with the D-RAM (IC903)
29	$\overline{\text{RESET B}}$	I	Reset signal input from the system controller (IC701) “L”: reset
30	VSS	—	Ground terminal
31	VCC	—	Power supply terminal (+3.3V)
32 to 39	YUV0 to YUV7	O	Video data output to the video encoder (IC920) (YUV; Y: luminance signal, UV: Screen video interface chrominance data bus)
40	VSSCN B	O	Vertical synchronous signal output to the video encoder (IC920)
41	HSSCN B	O	Horizontal synchronous signal output to the video encoder (IC920)
42	CLK	I	System clock signal input terminal Not used (open)
43	PCLK2XSCN	I	System clock signal (27 MHz) input from the video encoder (IC920)
44	PCKLQSCN	O	Pixel clock qualifier output for the screen video interface Not used (open)
45	AUX0	O	Sub control signal output terminal Not used (open)
46	AUX1	I	Serial data input from the system controller (IC701)
47	AUX2	O	Serial data output to the system controller (IC701)
48	AUX3	O	NTSC/PAL mode selection signal output to the video encoder (IC920) “L”: NTSC, “H”: PAL
49	AUX4	O	Sub control signal output terminal Not used (open)
50	VSS	—	Ground terminal
51	VCC	—	Power supply terminal (+3.3V)
52	AUX6	O	Communication request signal output to the system controller (IC701)
53	AUX5	I	Ready signal input from the system controller (IC701)
54	AUX7	I	Communication request signal input from the system controller (IC701)
55 to 62	LD0 to LD7	I	Data input from the program ROM (IC902)
63	$\overline{\text{LWR B}}$	O	Write enable signal output terminal “L” active Not used (open)
64	$\overline{\text{LOE B}}$	O	Output enable signal output to the program ROM (IC902) “L” active
65	$\overline{\text{LCS3 B}}$	O	Chip select signal output to the program ROM (IC902) “L” active
66	$\overline{\text{LCS1 B}}$	I	Serial data transfer clock signal input from the system controller (IC701) “L” active
67	$\overline{\text{LCS0 B}}$	O	Chip select signal output terminal “L” active Not used (open)
68 to 79	LA0 to LA11	O	Address signal output to the program ROM (IC902)
80	VSS	—	Ground terminal
81	VPP	—	Power supply terminal (+5V) (digital system)
82 to 86	LA12 to LA16	O	Address signal output to the program ROM (IC902)
87	LA17	O	Address signal output terminal Not used (open)
88	AUDIOCLK	I	Audio master clock signal (16.9344 MHz) input from the D/A converter (IC320)
89	AOUT	O	Audio interface serial data output to the D/A converter (IC320)
90	TBCK	O	Bit clock signal (2.8224 MHz) output to the D/A converter (IC320)
91	ATFS	O	L/R sampling clock signal (44.1 kHz) output to the D/A converter (IC320)
92	$\overline{\text{DOE B}}$	O	Output enable signal output to the D-RAM (IC903) “L” active
93	AIN	I	Audio interface serial data input terminal Not used (open)
94	RBCK	I	Audio interface bit clock signal (2.8224 MHz) input terminal Not used (open)
95	ARFS	I	Audio interface L/R sampling clock signal (44.1 kHz) input terminal Not used (open)

Pin No.	Pin Name	I/O	Function
96	TDMCLK	I	Bit clock signal (2.8224 MHz) input from the CXD2545Q (IC601)
97	TDMDR	I	Serial data input from the CXD2545Q (IC601)
98	TDMFS	I	L/R sampling clock signal (44.1 kHz) input from the CXD2545Q (IC601)
99	$\overline{\text{DCAS B}}$	O	Column address strobe signal output to the D-RAM (IC903) “L” active
100	VSS	—	Ground terminal

• MAIN BOARD IC920 TC90A07U (VIDEO ENCODER)

Pin No.	Pin Name	I/O	Function
1	MIFH	I	Horizontal synchronous signal input from the MPEG audio/video decoder (IC901)
2	MIFFL	I	Vertical synchronous signal input from the MPEG audio/video decoder (IC901)
3	MIFFR	O	Frame synchronous signal output terminal Not used (open)
4	VBLNKI	I	Video blanking signal input terminal “L”: blanking
5	VDD	—	Power supply terminal (+3.3V) (digital system)
6	GND	—	Ground terminal (digital system)
7	YCDI0	I	8 bit pixel data (LSB) input from the MPEG audio/video decoder (IC901)
8 to 13	YCDI1 to YCDI6	I	8 bit pixel data input from the MPEG audio/video decoder (IC901)
14	YCDI7	I	8 bit pixel data (MSB) input from the MPEG audio/video decoder (IC901)
15	MODE	I	NTSC/PAL mode selection signal input from the MPEG audio/video decoder (IC901) “L”: NTSC, “H”: PAL
16	VBLNKO	O	Video blanking signal output terminal
17	VDD	—	Power supply terminal (+3.3V) (digital system)
18	GND	—	Ground terminal (digital system)
19	CLPF	I	Low-pass filter on/off control signal input for the internal CbCr “L”: on, “H”: off Fixed at “L” in this set
20	BF	O	Burst flag pulse output terminal Not used (open)
21	BLK	O	Blanking signal output terminal Not used (open)
22	FLD	O	Field discrimination signal output terminal “L”: odd number field, “H”: even number field Not used (open)
23	BIAS2	—	Connect a capacitor for the D/A converter bias
24	BIAS1	—	Connect a capacitor for the D/A converter bias
25	VREF	I	Reference voltage input terminal (for D/A converter)
26	AGND	—	Ground terminal (analog system for D/A converter)
27	YOUT	O	Analog Y signal (luminance signal) output terminal Not used (open)
28	AVCC	—	Power supply terminal (+3.3V) (analog system for D/A converter)
29	COUT	O	Analog C signal (chroma signal) output terminal Not used (open)
30	AGND	—	Ground terminal (analog system for D/A converter)
31	CVOUT	O	Analog composite video signal output terminal
32	AVCC	—	Power supply terminal (+3.3V) (analog system for D/A converter)
33	CSYNC	O	Composite synchronous signal output terminal Not used (open)
34	HSYNC	O	Horizontal synchronous signal output terminal Not used (open)
35	VSYSN	O	Vertical synchronous signal output terminal Not used (open)
36	TMS3	I	Mode setting terminal Normally fixed at “H”
37	VDD	—	Power supply terminal (+3.3V) (digital system)
38	CK27I	I	System clock input terminal (27 MHz)
39	XO	O	System clock output terminal (27 MHz)
40	GND	—	Ground terminal (digital system)
41	TMS2	I	Mode setting terminal Normally fixed at “H”
42	CK27O	O	System clock signal (27 MHz) output to the MPEG audio/video decoder (IC901)
43	TMS1	I	Reset signal input from the system controller (IC701) “L”: reset
44	TMS0	I	Video output mode setting terminal “L”: normal output mode, “H”: color bar output mode

SECTION 7 EXPLODED VIEWS

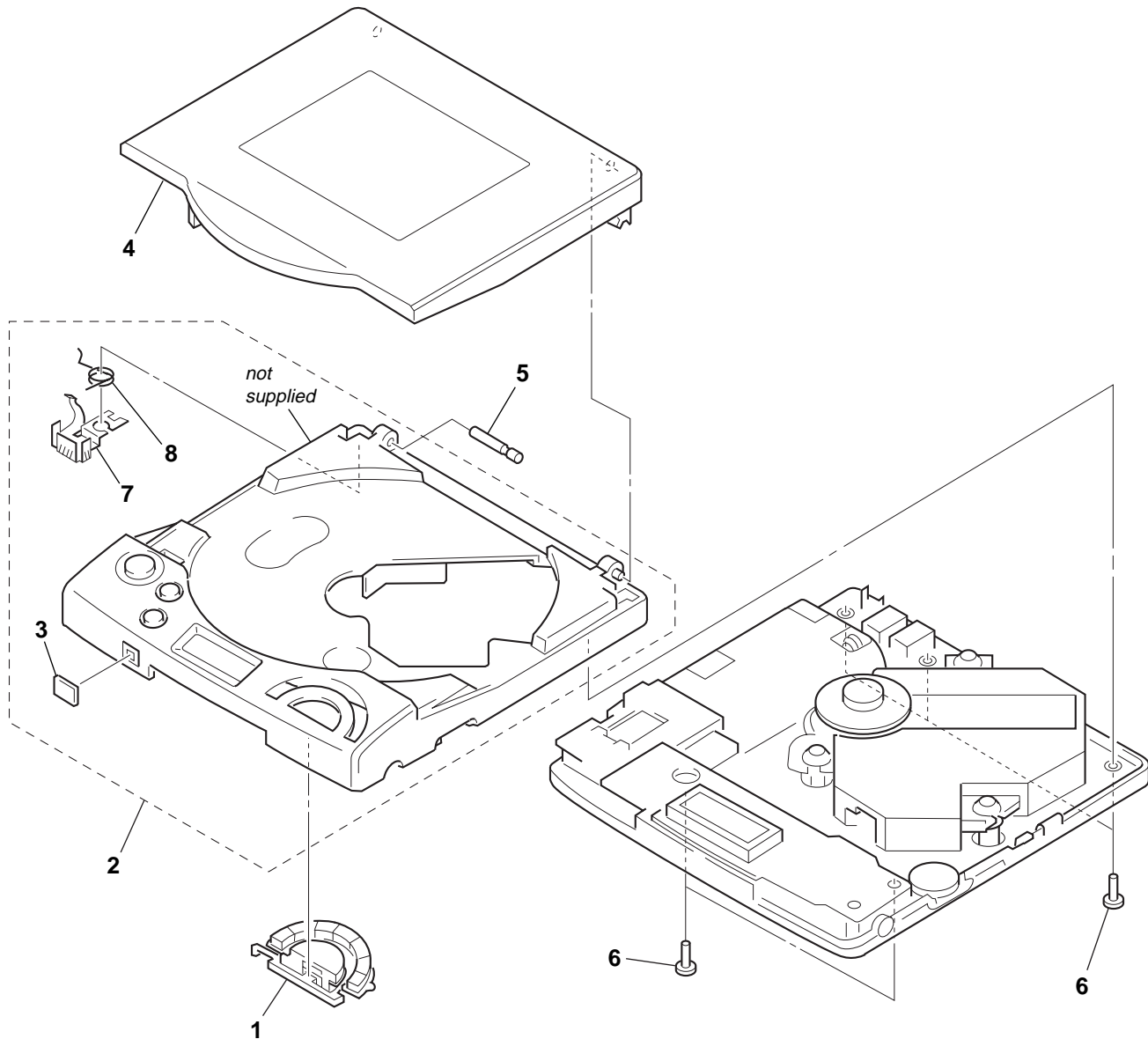
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)
 ↑ ↑
 Parts Color Cabinet's Color

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

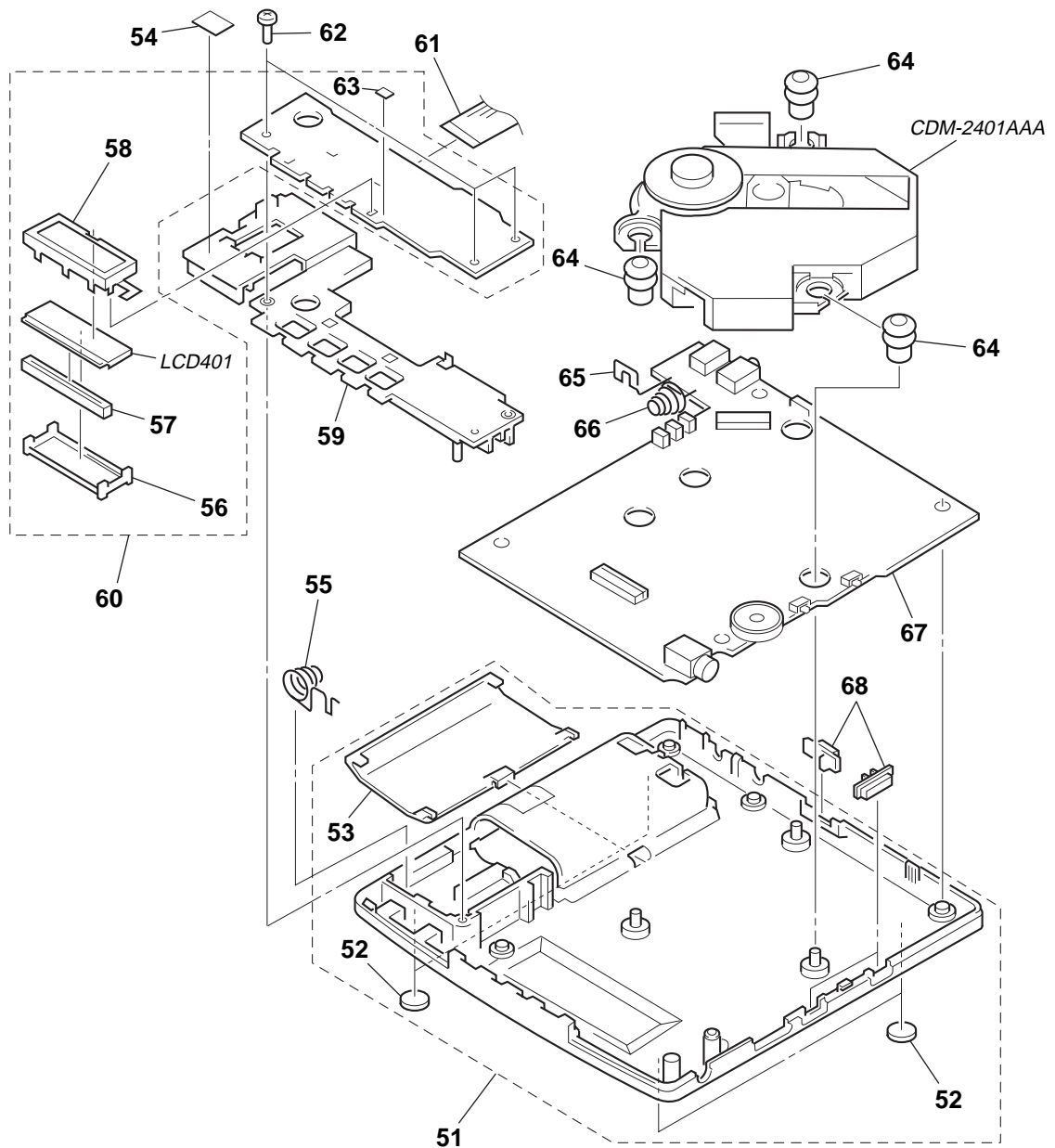
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

(1) CABINET SECTION-1



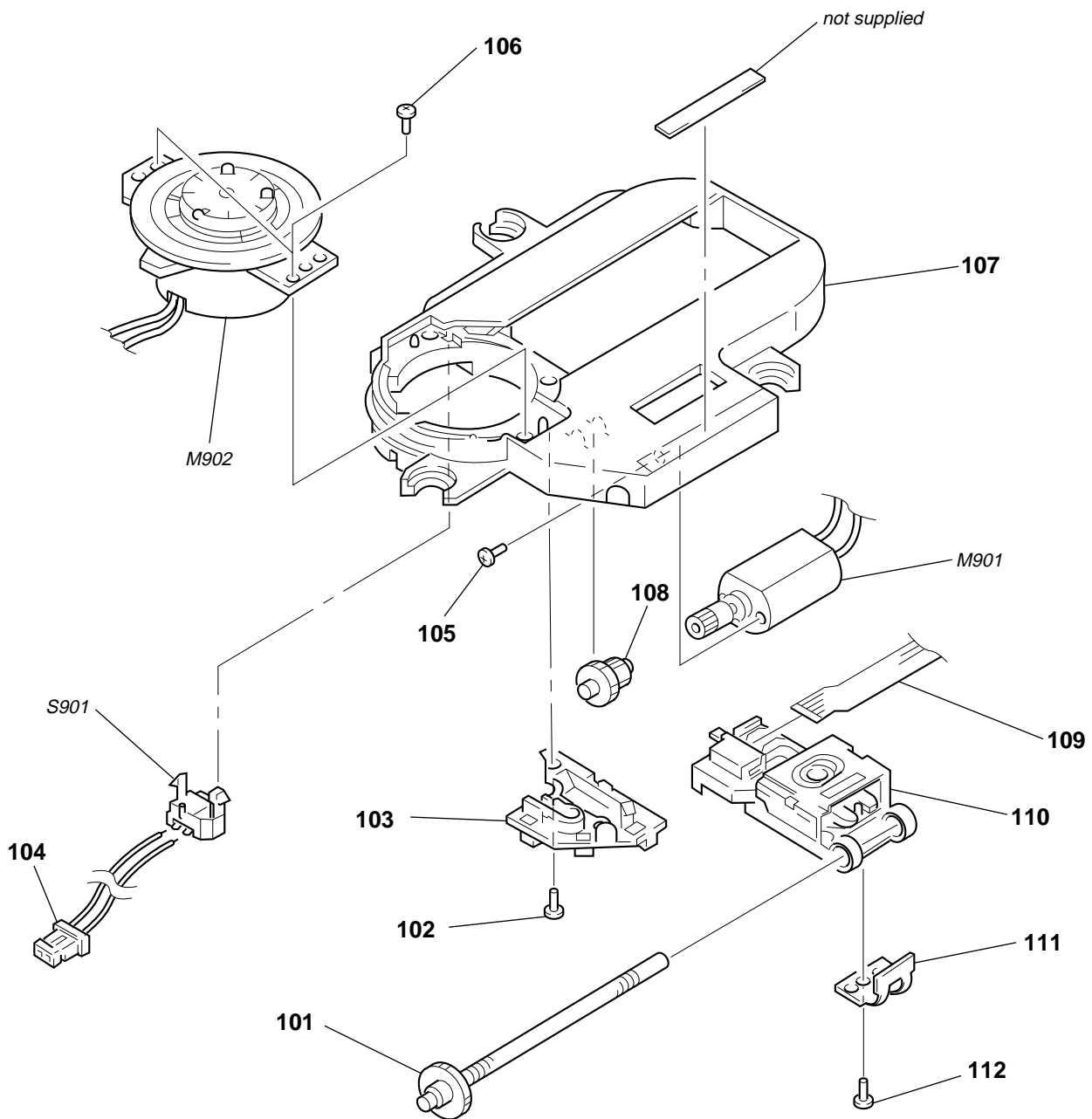
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-996-341-01	BUTTON (CONTROL)		5	4-996-352-01	SHAFT (FULCRUM)	
2	X-4950-497-1	CABINET (UPPER) ASSY		6	3-336-395-01	SCREW (B2X10) (G), TAPPING	
3	4-982-475-01	WINDOW, RAY CATCHER		7	4-996-347-01	SPRING (LOCK)	
4	A-3320-682-A	LID BLOCK ASSY, UPPER		* 8	4-996-344-02	SPRING (OPEN)	

(2) CABINET SECTION-2



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-4950-496-1	CABINET (LOWER) ASSY		61	1-776-149-11	CABLE, FLEXIBLE FLAT 30P	
52	4-962-025-21	FOOT, RUBBER		62	3-336-395-01	SCREW (B2X10) (G), TAPPING	
53	4-996-333-01	LID, BATTERY CASE		63	4-918-544-11	SPACER (T)	
54	3-485-343-11	SHEET		64	4-975-811-01	INSULATOR	
55	4-996-339-01	TERMINAL (RELAY), BATTERY		65	4-996-335-01	TERMINAL (+), BATTERY	
56	4-213-585-01	SPACER (LCD)		66	4-996-336-01	TERMINAL (-), BATTERY	
57	1-694-374-11	CONDUCTIVE BOARD, CONNECTION		67	A-3323-070-A	MAIN BOARD, COMPLETE	
58	4-996-338-01	HOLDER, LCD		68	4-975-765-01	KNOB (DBB/ESP)	
59	4-996-337-01	BASE, BUTTON		LCD401	1-801-975-11	DISPLAY PANEL, LIQUID CRYSTAL	
60	A-3323-071-A	LCD BOARD, COMPLETE					

(3) MECHANISM DECK SECTION
(CDM-2401AAA)



The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	A-3320-684-A	SCREW ASSY, FEED		109	1-660-965-11	SLIDE FLEXIBLE BOARD	
102	3-318-203-11	SCREW (B1.7X6), TAPPING		\triangle 110	X-4950-060-1	OPTICAL PICK-UP (DAX-01A2)	
103	4-972-163-04	SPRING, SLED		111	4-972-165-01	RACK	
104	1-690-530-81	LEAD (WITH CONNECTOR)		112	4-973-631-01	SCREW	
105	7-627-850-17	SCREW, PRECISION +P 1.4X2.5		M901	A-3303-458-A	MOTOR ASSY, TURNTABLE (SPINDLE)	
106	3-719-401-11	SCREW (B1.7), TAPPING		M902	A-3303-403-A	MOTOR ASSY, SLED	
107	4-972-162-01	CHASSIS		S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)	
108	4-974-003-01	GEAR (B)					

SECTION 8 ELECTRICAL PARTS LIST

LCD

MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-3323-071-A	LCD BOARD, COMPLETE *****					
	1-694-374-11	CONDUCTIVE BOARD, CONNECTION		S443	1-762-366-11	SWITCH, TACTILE (I◀◀ PREV)	
	4-213-585-01	SPACER (LCD)		S444	1-762-366-11	SWITCH, TACTILE (▶▶II)	
	4-996-338-01	HOLDER, LCD		S445	1-762-366-11	SWITCH, TACTILE (▶▶▶ NEXT)	
				S446	1-762-366-11	SWITCH, TACTILE (+ MENU)	

		< CAPACITOR >			A-3323-070-A	MAIN BOARD, COMPLETE *****	
C401	1-115-156-11	CERAMIC CHIP 1uF	10V			< CAPACITOR >	
C402	1-164-156-11	CERAMIC CHIP 0.1uF	25V				
C403	1-124-778-00	ELECT CHIP 22uF 20%	6.3V	C101	1-107-686-11	TANTALUM CHIP 4.7uF 20%	16V
C404	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C102	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V
		< CONNECTOR >		C103	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
CN401	1-573-370-21	CONNECTOR, FFC/FPC 30P		C104	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
		< FERRITE BEAD >		C105	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
FB401	1-500-444-11	FERRITE 0uH		C106	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
FB402	1-500-444-11	FERRITE 0uH		C107	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
FB404	1-500-444-11	FERRITE 0uH		C201	1-107-686-11	TANTALUM CHIP 4.7uF 20%	16V
		< IC >		C202	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V
IC401	8-749-014-29	IC RS-350		C203	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
		< LIQUID CRYSTAL DISPLAY >					
LCD401	1-801-975-11	DISPLAY PANEL, LIQUID CRYSTAL		C204	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
		< RESISTOR >		C205	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
R401	1-216-813-11	METAL CHIP 220 5%	1/16W	C206	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
R403	1-216-813-11	METAL CHIP 220 5%	1/16W	C207	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
R404	1-216-821-11	METAL CHIP 1K 5%	1/16W	C301	1-115-156-11	CERAMIC CHIP 1uF	10V
R421	1-218-847-11	RES, CHIP 1K 0.5%	1/16W	C321	1-115-156-11	CERAMIC CHIP 1uF	10V
R441	1-218-847-11	RES, CHIP 1K 0.5%	1/16W	C322	1-126-209-11	ELECT CHIP 100uF 20%	4V
				C323	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
R442	1-218-851-11	RES, CHIP 1.5K 0.5%	1/16W	C324	1-126-246-11	ELECT CHIP 220uF 20%	4V
R443	1-218-855-11	RES, CHIP 2.2K 0.5%	1/16W	C325	1-162-922-11	CERAMIC CHIP 39PF 5%	50V
R444	1-218-859-11	RES, CHIP 3.3K 0.5%	1/16W				
R445	1-218-863-11	RES, CHIP 4.7K 0.5%	1/16W	C326	1-115-156-11	CERAMIC CHIP 1uF	10V
		< SWITCH >		C332	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
S401	1-692-366-11	SWITCH, PUSH (1 KEY) (OPEN)		C360	1-104-915-11	TANTALUM CHIP 2.2uF 20%	20V
S421	1-762-366-11	SWITCH, TACTILE (■ POWER OFF)		C362	1-126-602-11	ELECT CHIP 3.3uF 20%	50V
S422	1-762-366-11	SWITCH, TACTILE (○ SELECT)		C363	1-115-156-11	CERAMIC CHIP 1uF	10V
S441	1-762-366-11	SWITCH, TACTILE (↻ RETURN)					
S442	1-762-366-11	SWITCH, TACTILE (– MENU)		C364	1-115-156-11	CERAMIC CHIP 1uF	10V
				C366	1-164-156-11	CERAMIC CHIP 0.1uF	25V
				C367	1-104-847-11	TANTALUM CHIP 22uF 20%	4V
				C368	1-124-779-00	ELECT CHIP 10uF 20%	16V
				C369	1-165-112-11	CERAMIC CHIP 0.33uF	16V
				C370	1-126-395-11	ELECT 22uF 20%	16V
				C371	1-115-156-11	CERAMIC CHIP 1uF	10V
				C372	1-164-156-11	CERAMIC CHIP 0.1uF	25V
				C373	1-164-677-11	CERAMIC CHIP 0.033uF 10%	16V

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C374	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C828	1-115-416-11	CERAMIC CHIP 1000PF 5%	25V
C500	1-110-569-11	TANTALUM CHIP 47uF 20%	6.3V	C860	1-128-416-11	ELECT CHIP 100uF 20%	16V
C501	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C861	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C502	1-110-569-11	TANTALUM CHIP 47uF 20%	6.3V	C862	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C503	1-104-851-11	TANTALUM CHIP 10uF 20%	10V	C863	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C504	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V	C864	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C505	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C865	1-104-915-11	TANTALUM CHIP 2.2uF 20%	20V
C507	1-162-919-11	CERAMIC CHIP 22PF 5%	50V	C867	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C508	1-104-852-11	TANTALUM CHIP 22uF 20%	10V	C869	1-164-217-11	CERAMIC CHIP 150PF 5%	50V
C509	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	C870	1-115-416-11	CERAMIC CHIP 1000PF 5%	25V
C510	1-110-563-11	CERAMIC CHIP 0.068uF 10%	16V	C872	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C511	1-104-852-11	TANTALUM CHIP 22uF 20%	10V	C873	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C512	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C881	1-119-764-11	ELECT 47uF 20%	4V
C513	1-164-677-11	CERAMIC CHIP 0.033uF 10%	16V	C882	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C515	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C883	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C516	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C884	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C517	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C890	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C518	1-104-915-11	TANTALUM CHIP 2.2uF 20%	20V	C891	1-128-416-11	ELECT CHIP 100uF 20%	16V
C519	1-115-156-11	CERAMIC CHIP 1uF	10V	C892	1-119-765-11	ELECT 47uF 20%	6.3V
C520	1-115-156-11	CERAMIC CHIP 1uF	10V	C895	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C523	1-126-246-11	ELECT CHIP 220uF 20%	4V	C901	1-104-852-11	TANTALUM CHIP 22uF 20%	10V
C524	1-162-921-11	CERAMIC CHIP 33PF 5%	50V	C904	1-115-156-11	CERAMIC CHIP 1uF	10V
C601	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C905	1-104-851-11	TANTALUM CHIP 10uF 20%	10V
C602	1-164-315-11	CERAMIC CHIP 470PF 5%	50V	C907	1-104-852-11	TANTALUM CHIP 22uF 20%	10V
C603	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V	C908	1-119-944-11	ELECT 470uF 20%	4V
C604	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C910	1-115-156-11	CERAMIC CHIP 1uF	10V
C605	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V	C911	1-115-156-11	CERAMIC CHIP 1uF	10V
C606	1-162-965-11	CERAMIC CHIP 0.0015uF 10%	50V	C915	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C607	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	C917	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C608	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C920	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C609	1-107-823-11	CERAMIC CHIP 0.47uF 10%	16V	C921	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C610	1-104-852-11	TANTALUM CHIP 22uF 20%	10V	C922	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C611	1-104-852-11	TANTALUM CHIP 22uF 20%	10V	C923	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C614	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C924	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C615	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	C925	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C616	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C926	1-162-922-11	CERAMIC CHIP 39PF 5%	50V
C617	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C927	1-162-922-11	CERAMIC CHIP 39PF 5%	50V
C618	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C928	1-162-911-11	CERAMIC CHIP 6PF 0.5PF	50V
C619	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C929	1-162-911-11	CERAMIC CHIP 6PF 0.5PF	50V
C682	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C931	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C701	1-104-851-11	TANTALUM CHIP 10uF 20%	10V	C932	1-104-852-11	TANTALUM CHIP 22uF 20%	10V
C702	1-104-851-11	TANTALUM CHIP 10uF 20%	10V	C933	1-104-852-11	TANTALUM CHIP 22uF 20%	10V
C703	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C936	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C708	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C960	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C711	1-135-208-11	TANTALUM CHIP 1uF 20%	10V	C961	1-115-156-11	CERAMIC CHIP 1uF	10V
C802	1-126-193-11	ELECT 1uF 20%	50V	C962	1-104-852-11	TANTALUM CHIP 22uF 20%	10V
C803	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C963	1-119-944-11	ELECT 470uF 20%	4V
C804	1-109-982-11	CERAMIC CHIP 1uF 10%	10V	C966	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C810	1-164-156-11	CERAMIC CHIP 0.1uF	25V	< CONNECTOR >			
C811	1-104-851-11	TANTALUM CHIP 10uF 20%	10V	CN501	1-566-530-11	CONNECTOR, FPC (ZIF) 14P	
C812	1-164-156-11	CERAMIC CHIP 0.1uF	25V	* CN502	1-695-320-31	PIN, CONNECTOR (1.5MM) (SMD) 2P	
C820	1-164-156-11	CERAMIC CHIP 0.1uF	25V	* CN503	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P	
C821	1-115-156-11	CERAMIC CHIP 1uF	10V	* CN504	1-695-320-51	PIN, CONNECTOR (1.5MM) (SMD) 2P	
C822	1-124-779-00	ELECT CHIP 10uF 20%	16V	* CN701	1-573-939-11	CONNECTOR, FFC/FPC (ZIF) 30P	
C823	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	< DIODE >			
C826	1-119-764-11	ELECT 47uF 20%	4V	D101	8-719-039-99	DIODE UMZ8.2T	
C827	1-164-156-11	CERAMIC CHIP 0.1uF	25V				

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D105	8-719-039-99	DIODE UMZ8.2T				< COIL >	
D201	8-719-039-99	DIODE UMZ8.2T					
D205	8-719-039-99	DIODE UMZ8.2T					
D302	8-719-039-99	DIODE UMZ8.2T		L320	1-412-002-41	INDUCTOR CHIP 4.7uH	
				L321	1-412-002-41	INDUCTOR CHIP 4.7uH	
D340	8-719-404-35	DIODE MA141WK		L322	1-412-002-41	INDUCTOR CHIP 4.7uH	
D501	8-719-031-17	DIODE 1SS322-TE85L		L323	1-412-979-21	INDUCTOR 1uH	
D502	8-719-039-99	DIODE UMZ8.2T		L501	1-414-398-11	INDUCTOR 10uH	
D504	8-719-404-49	DIODE MA111					
D601	8-719-024-81	DIODE 1SS300-TE85L		L502	1-414-398-11	INDUCTOR 10uH	
				L503	1-414-854-11	INDUCTOR 1mH	
D805	8-719-048-98	DIODE RB160L-40TE25		L504	1-414-402-11	INDUCTOR 47uH	
D808	8-719-048-98	DIODE RB160L-40TE25		L505	1-414-402-11	INDUCTOR 47uH	
D820	8-719-048-98	DIODE RB160L-40TE25		L506	1-414-402-11	INDUCTOR 47uH	
D880	8-719-048-98	DIODE RB160L-40TE25					
D890	8-719-048-98	DIODE RB160L-40TE25		L507	1-414-402-11	INDUCTOR 47uH	
				L601	1-410-997-22	INDUCTOR CHIP 2.2uH	
D891	8-719-049-09	DIODE 1SS367-T3SONY		L602	1-410-997-22	INDUCTOR CHIP 2.2uH	
		< FERRITE BEAD >		L801	1-414-392-21	INDUCTOR 1uH	
				L820	1-414-526-11	INDUCTOR CHIP 47uH	
FB101	1-500-444-11	FERRITE 0uH					
FB102	1-500-444-11	FERRITE 0uH		L880	1-414-526-11	INDUCTOR CHIP 47uH	
FB201	1-500-444-11	FERRITE 0uH		L901	1-414-392-21	INDUCTOR 1uH	
FB202	1-500-444-11	FERRITE 0uH		L902	1-410-997-22	INDUCTOR CHIP 2.2uH	
FB301	1-414-656-11	FERRITE 0uH		L921	1-412-979-21	INDUCTOR 1uH	
				L923	1-414-398-11	INDUCTOR 10uH	
FB306	1-500-444-11	FERRITE 0uH					
FB701	1-500-444-11	FERRITE 0uH		L924	1-410-997-22	INDUCTOR CHIP 2.2uH	
FB703	1-414-656-11	FERRITE 0uH		L960	1-410-993-42	INDUCTOR CHIP 1uH	
FB801	1-414-633-22	INDUCTOR CHIP 0uH		L961	1-412-002-41	INDUCTOR CHIP 4.7uH	
FB903	1-414-656-11	FERRITE 0uH				< TRANSISTOR >	
FB960	1-414-656-11	FERRITE 0uH		Q101	8-729-231-74	TRANSISTOR 2SC4116-GL	
		< IC >		Q201	8-729-231-74	TRANSISTOR 2SC4116-GL	
				Q340	8-729-907-39	TRANSISTOR IMD2	
IC301	8-759-186-51	IC TC74VHC157F		Q501	8-729-904-86	TRANSISTOR 2SB1197K-Q	
IC320	8-759-459-18	IC TC9434AFNEL		Q503	8-729-930-32	TRANSISTOR UMH11	
IC360	8-759-386-50	IC BA3574BFS					
IC501	8-752-069-29	IC CXA1791N		Q504	8-729-930-32	TRANSISTOR UMH11	
IC502	8-759-442-80	IC MPC17A38ZVMEL		Q505	8-729-029-14	TRANSISTOR DTC144EUA-T106	
				Q506	8-729-231-74	TRANSISTOR 2SC4116-GL	
IC601	8-752-369-78	IC CXD2545Q		Q507	8-729-029-14	TRANSISTOR DTC144EUA-T106	
IC602	8-759-179-64	IC BA3890F		Q508	8-729-029-14	TRANSISTOR DTC144EUA-T106	
IC701	8-759-571-15	IC MSM65354-412GS-BK4					
IC702	8-759-442-79	IC RH5VL27AA-T1		Q509	8-729-028-91	TRANSISTOR DTA144EUA-T106	
IC801	8-759-085-76	IC S-81332HG-KC-T1		Q601	8-729-029-14	TRANSISTOR DTC144EUA-T106	
				Q702	8-729-027-60	TRANSISTOR DTC144TKA-T146	
IC810	8-759-530-69	IC XC61AC4502PR		Q703	8-729-028-91	TRANSISTOR DTA144EUA-T106	
IC820	8-759-521-35	IC TL5001CD		Q801	8-729-904-86	TRANSISTOR 2SB1197K-Q	
IC861	8-759-360-66	IC TL1453CPW-E20					
IC862	8-759-441-31	IC MC14053BDTR2		Q802	8-729-903-10	TRANSISTOR FMW1	
IC901	8-759-493-57	IC ES3210		Q803	8-729-930-32	TRANSISTOR UMH11	
				Q810	8-729-930-32	TRANSISTOR UMH11	
IC902	8-759-548-16	IC MX23C1010TI-90-54816		Q820	8-729-028-91	TRANSISTOR DTA144EUA-T106	
IC903	8-759-498-43	IC MSM54V16258ASL-45TSK		Q822	8-729-043-79	FET 2SJ517TL	
IC904	8-759-396-26	IC SN74LV08PW-E20					
IC920	8-759-493-55	IC TC90A07U		Q861	8-729-921-05	TRANSISTOR FMC3-T148	
IC921	8-759-085-76	IC S-81332HG-KC-T1		Q881	8-729-043-79	FET 2SJ517TL	
				Q882	8-729-043-79	FET 2SJ517TL	
IC960	8-759-433-44	IC MM1031XML		Q891	8-729-024-44	FET 2SK2315TYTR	
		< JACK >				< RESISTOR >	
J301	1-580-709-21	JACK (♂, PHONES)		R101	1-216-821-11	METAL CHIP 1K 5% 1/16W	
J801	1-778-153-11	JACK, DC (POLARITY UNIFIED TYPE)		R102	1-216-845-11	METAL CHIP 100K 5% 1/16W	
		(DC IN 6V)		R103	1-216-833-11	METAL CHIP 10K 5% 1/16W	
J901	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO OUT)		R105	1-216-821-11	METAL CHIP 1K 5% 1/16W	
				R106	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	

MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R107	1-216-789-11	METAL CHIP	2.2	5%	1/16W	R612	1-218-895-11	RES, CHIP	100K	0.5%	1/16W
R108	1-216-813-11	METAL CHIP	220	5%	1/16W	R614	1-218-871-11	RES, CHIP	10K	0.5%	1/16W
R201	1-216-821-11	METAL CHIP	1K	5%	1/16W	R619	1-216-833-11	METAL CHIP	10K	5%	1/16W
R202	1-216-845-11	METAL CHIP	100K	5%	1/16W						
R203	1-216-833-11	METAL CHIP	10K	5%	1/16W	R620	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R681	1-216-833-11	METAL CHIP	10K	5%	1/16W
R205	1-216-821-11	METAL CHIP	1K	5%	1/16W	R685	1-216-864-11	METAL CHIP	0	5%	1/16W
R206	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R686	1-216-864-11	METAL CHIP	0	5%	1/16W
R207	1-216-789-11	METAL CHIP	2.2	5%	1/16W	R687	1-216-864-11	METAL CHIP	0	5%	1/16W
R208	1-216-813-11	METAL CHIP	220	5%	1/16W						
R312	1-216-845-11	METAL CHIP	100K	5%	1/16W	R700	1-216-853-11	METAL CHIP	470K	5%	1/16W
						R701	1-216-845-11	METAL CHIP	100K	5%	1/16W
R314	1-216-857-11	METAL CHIP	1M	5%	1/16W	R702	1-216-845-11	METAL CHIP	100K	5%	1/16W
R320	1-216-803-11	METAL CHIP	33	5%	1/16W	R703	1-216-853-11	METAL CHIP	470K	5%	1/16W
R323	1-216-857-11	METAL CHIP	1M	5%	1/16W	R704	1-216-853-11	METAL CHIP	470K	5%	1/16W
R327	1-216-823-11	METAL CHIP	1.5K	5%	1/16W						
R502	1-216-847-11	METAL CHIP	150K	5%	1/16W	R705	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R706	1-216-833-11	METAL CHIP	10K	5%	1/16W
R503	1-216-847-11	METAL CHIP	150K	5%	1/16W	R707	1-216-845-11	METAL CHIP	100K	5%	1/16W
R504	1-216-847-11	METAL CHIP	150K	5%	1/16W	R708	1-216-853-11	METAL CHIP	470K	5%	1/16W
R505	1-216-847-11	METAL CHIP	150K	5%	1/16W	R709	1-216-845-11	METAL CHIP	100K	5%	1/16W
R506	1-216-850-11	METAL CHIP	270K	5%	1/16W						
R507	1-216-850-11	METAL CHIP	270K	5%	1/16W	R710	1-216-853-11	METAL CHIP	470K	5%	1/16W
						R712	1-216-845-11	METAL CHIP	100K	5%	1/16W
R508	1-216-308-00	METAL CHIP	4.7	5%	1/10W	R713	1-216-853-11	METAL CHIP	470K	5%	1/16W
R509	1-216-845-11	METAL CHIP	100K	5%	1/16W	R714	1-216-813-11	METAL CHIP	220	5%	1/16W
R510	1-216-821-11	METAL CHIP	1K	5%	1/16W	R715	1-216-845-11	METAL CHIP	100K	5%	1/16W
R511	1-216-845-11	METAL CHIP	100K	5%	1/16W						
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W	R716	1-216-851-11	METAL CHIP	330K	5%	1/16W
						R801	1-218-896-11	RES, CHIP	110K	0.5%	1/16W
R514	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R802	1-218-894-11	RES, CHIP	91K	0.5%	1/16W
R515	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R803	1-218-907-11	RES, CHIP	330K	0.5%	1/16W
R516	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	R804	1-216-295-00	SHORT	0		
R517	1-216-835-11	METAL CHIP	15K	5%	1/16W						
R519	1-216-833-11	METAL CHIP	10K	5%	1/16W	R806	1-218-903-11	RES, CHIP	220K	0.5%	1/16W
						R810	1-216-833-11	METAL CHIP	10K	5%	1/16W
R520	1-216-841-11	METAL CHIP	47K	5%	1/16W	R811	1-216-847-11	METAL CHIP	150K	5%	1/16W
R521	1-216-839-11	METAL CHIP	33K	5%	1/16W	R812	1-216-821-11	METAL CHIP	1K	5%	1/16W
R522	1-216-843-11	METAL CHIP	68K	5%	1/16W	R813	1-216-817-11	METAL CHIP	470	5%	1/16W
R523	1-218-898-11	RES, CHIP	130K	0.5%	1/16W						
R524	1-216-850-11	METAL CHIP	270K	5%	1/16W	R815	1-216-809-11	METAL CHIP	100	5%	1/16W
						R820	1-218-886-11	RES, CHIP	43K	0.5%	1/16W
R525	1-216-836-11	METAL CHIP	18K	5%	1/16W	R821	1-218-888-11	RES, CHIP	51K	0.5%	1/16W
R526	1-216-864-11	METAL CHIP	0	5%	1/16W	R822	1-216-833-11	METAL CHIP	10K	5%	1/16W
R527	1-216-845-11	METAL CHIP	100K	5%	1/16W	R824	1-216-801-11	METAL CHIP	22	5%	1/16W
R528	1-216-857-11	METAL CHIP	1M	5%	1/16W						
R529	1-216-837-11	METAL CHIP	22K	5%	1/16W	R826	1-216-857-11	METAL CHIP	1M	5%	1/16W
						R827	1-218-877-11	RES, CHIP	18K	0.5%	1/16W
R530	1-216-821-11	METAL CHIP	1K	5%	1/16W	R828	1-218-879-11	RES, CHIP	22K	0.5%	1/16W
R531	1-216-845-11	METAL CHIP	100K	5%	1/16W	R860	1-218-883-11	RES, CHIP	33K	0.5%	1/16W
R532	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	R861	1-218-887-11	RES, CHIP	47K	0.5%	1/16W
R533	1-216-829-11	METAL CHIP	4.7K	5%	1/16W						
R534	1-216-809-11	METAL CHIP	100	5%	1/16W	R862	1-218-885-11	RES, CHIP	39K	0.5%	1/16W
						R863	1-218-885-11	RES, CHIP	39K	0.5%	1/16W
R541	1-216-841-11	METAL CHIP	47K	5%	1/16W	R864	1-218-883-11	RES, CHIP	33K	0.5%	1/16W
R542	1-216-821-11	METAL CHIP	1K	5%	1/16W	R865	1-218-887-11	RES, CHIP	47K	0.5%	1/16W
R543	1-216-821-11	METAL CHIP	1K	5%	1/16W	R866	1-218-885-11	RES, CHIP	39K	0.5%	1/16W
R559	1-216-864-11	METAL CHIP	0	5%	1/16W						
R601	1-216-845-11	METAL CHIP	100K	5%	1/16W	R867	1-218-885-11	RES, CHIP	39K	0.5%	1/16W
						R869	1-216-833-11	METAL CHIP	10K	5%	1/16W
R602	1-216-839-11	METAL CHIP	33K	5%	1/16W	R870	1-218-878-11	RES, CHIP	20K	0.5%	1/16W
R603	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R871	1-216-833-11	METAL CHIP	10K	5%	1/16W
R604	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	R872	1-216-833-11	METAL CHIP	10K	5%	1/16W
R605	1-216-827-11	METAL CHIP	3.3K	5%	1/16W						
R606	1-216-857-11	METAL CHIP	1M	5%	1/16W	R873	1-218-871-11	RES, CHIP	10K	0.5%	1/16W
						R874	1-218-847-11	RES, CHIP	1K	0.5%	1/16W
R607	1-216-833-11	METAL CHIP	10K	5%	1/16W	R880	1-216-801-11	METAL CHIP	22	5%	1/16W
R611	1-216-841-11	METAL CHIP	47K	5%	1/16W	R881	1-216-857-11	METAL CHIP	1M	5%	1/16W
						R883	1-218-882-11	RES, CHIP	30K	0.5%	1/16W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R884	1-218-877-11	RES, CHIP	18K 0.5% 1/16W	ACCESSORIES & PACKING MATERIALS			
R885	1-216-857-11	METAL CHIP	1M 5% 1/16W	*****			
R886	1-216-809-11	METAL CHIP	100 5% 1/16W	△	1-467-570-31	ADAPTOR, AC (E)	
R888	1-216-295-00	SHORT	0	△	1-475-712-11	ADAPTOR, AC (AC-E67A) (Chinese)	
R892	1-216-857-11	METAL CHIP	1M 5% 1/16W	△	1-475-754-11	ADAPTOR, AC (AC-E67) (Hong Kong)	
R896	1-218-883-11	RES, CHIP	33K 0.5% 1/16W		1-783-028-11	CORD, CONNECTION (AV MONITOR CORD)	
R897	1-218-869-11	RES, CHIP	8.2K 0.5% 1/16W		3-865-070-11	MANUAL, INSTRUCTION (ENGLISH, CHINESE) (E, Hong Kong)	
R901	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R904	1-216-845-11	METAL CHIP	100K 5% 1/16W		3-865-070-21	MANUAL, INSTRUCTION (ENGLISH, CHINESE) (Chinese)	
R921	1-218-887-11	RES, CHIP	47K 0.5% 1/16W				
R922	1-218-883-11	RES, CHIP	33K 0.5% 1/16W		4-991-047-01	LID, BATTERY CASE (for RMT-DV10)	
R924	1-216-857-11	METAL CHIP	1M 5% 1/16W		8-917-658-90	REMOTE COMMANDER RMT-DV10	
R926	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R927	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R960	1-216-809-11	METAL CHIP	100 5% 1/16W				
R961	1-216-022-00	METAL CHIP	75 5% 1/10W				
R962	1-216-833-11	METAL CHIP	10K 5% 1/16W				
< VARIABLE RESISTOR >							
RV301	1-225-570-11	RES, VAR, CARBON 10K/10K (▲ VOLUME)					
< SWITCH >							
S701	1-572-922-11	SWITCH, SLIDE (HOLD ►)					
S702	1-572-922-11	SWITCH, SLIDE (RESUME)					
S703	1-692-605-31	SWITCH, SLIDE (PAL, AUTO, NTSC (VIDEO SYSTEM))					
< TRANSFORMER >							
T891	1-431-652-21	TRANSFORMER, DC-DC CONVERTER					
< VIBRATOR >							
X320	1-767-366-21	VIBRATOR, CERAMIC (16.9344MHz)					
X701	1-579-063-41	VIBRATOR, CERAMIC (4.19MHz)					
X920	1-767-519-11	VIBRATOR, CRYSTAL (27MHz)					

MISCELLANEOUS							

61	1-776-149-11	CABLE, FLEXIBLE FLAT 30P					
104	1-690-530-81	LEAD (WITH CONNECTOR)					
109	1-660-965-11	SLIDE FLEXIBLE BOARD					
△ 110	X-4950-060-1	OPTICAL PICK-UP (DAX-01A2)					
M901	A-3303-458-A	MOTOR ASSY, TURNTABLE (SPINDLE)					
M902	A-3303-403-A	MOTOR ASSY, SLED					
S910	1-571-099-21	SWITCH (1 KEY) (LIMIT)					

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

